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CHALLENGE OF EDUCATION

- a policy perspective



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FOREWORD

This document represents an important stage in the process of reviewing and reshaping the education system to enable it to meet the challenges of the future and also improve its efficiency and quality.

The analysis and observations presented in this paper lead to a number of general conclusions. The first and the most important of these is that whatever the organisation, the resources or policy framework, the ultimate determinants for success or failure in education are the commitment of society to it and the sense of purpose and integrity of the participants in the process of implementation. Given these two ingredients, people, who are deeply involved with achievement of certain goals, can rise above the limitations of their environment and accomplish their objectives. When there is no sense of dedication, policies, good or bad, become words without meaning.

A policy takes concrete shape only in the process of implementation. If those involved with programme planning, resource allocation and the actual operation of the teaching-learning process do not understand their tasks or take these casually, no worthwhile results can accrue.

On the threshold of a new era, the country must ask itself as to what the goals of the new education policy should be and, if these are adopted, would society be prepared to extend the required support to realise them.

This document contains an overview of the state of education and pointers to the direction of future initiatives, based essentially on the views and suggestions from educational planners, teachers, students, parents, intellectuals and citizens interested in education.

Inadequacies of the present system have been brought out to provide background for realistic policy making so that the limitations and constraints are appreciated while defining the tasks and formulating the measures for their implementation.

The analysis of developments over the last two decades makes it clear that desired improvements have not materialised because neither the resources nor the measures for restructuring were commensurate with the imaginative and purposeful thrust of the education policy adopted in 1968.



CHAPTER I

EDUCATION, SOCIETY AND DEVELOPMENT

1.1 When the National Education Policy was formulated in 1968, it was envisaged that it would be followed by a "five yearly review of progress and working out of new policies and programmes". In pursuance of this, at the time of formulation of every new five year plan, a review has been undertaken to assess the shortcomings and achievements of education and decide upon the programmes for the coming five years. While these reviews have served a useful purpose, it is now felt that a mere review and minor modifications of the present framework will not be enough. The country now stands on the threshold of the twenty-first century. Those who are being born now will finish their elementary schooling at the turn of the century and enter into a world which will, it is already clear, offer opportunities unprecedented in the history of mankind to those who are equipped to cope with the future challenges and the accelerating pace of change.

1.2 Apart from the imperatives arising out of a continuing revolution in the world of technology, India is faced with challenges at home whose urgency cannot be denied. Whether the country can face these internal as well as external challenges successfully will decide the quality of life of the citizens of tomorrow. Education is the most effective instrument to meet these challenges. Only education can imbue people with the knowledge, the sense of purpose and the confidence essential for building a dynamic, vibrant and cohesive nation capable of providing its people with the wherewithal for creating better, fuller and more purposeful life.

1.3 Before any specific tasks are assigned to education, it is necessary to look carefully at the nature and concerns of education and the role various sectors within it can play for the development of individual and society. Once such an overview has been presented, it

would be easier to determine the manner in which various tasks should be performed through the formulation of appropriate policies and strategies for educational restructuring.

1.4 In the history of mankind, education has formed a continuum and a basis for the development of human society. Through development of attitudes, values, capabilities both of knowledge and skills, education provides strength and resilience to people to respond to changing situations and enables them to cause and contribute to societal development. History has established beyond doubt the crucial role played by human resources in the development of nations. And the development of human resources is the main function of education.

Social Development

1.5 The concept of societal development includes economic development for furthering the material well-being of people; social and political development for living harmoniously and promoting a democratic and just society; and intellectual, cultural and aesthetic development for enrichment of the quality of life.

1.6 Change, rather than status quo, has become the watchword for successful living and education has been recognised as the tool for ushering in changes in an orderly manner. While education continues to be concerned essentially with individual development, its approach to this fundamental task is now conditioned by social concerns which have acquired a new significance with a view to reducing conflict and violence. Great wealth of experience has been accumulated about the modalities by which education can play the roles assigned to it. In this process, the concept of education itself has changed. It is no more confined to formal structures and institutions. The dynamics of the expansion of knowledge has led to the concept of life-long learning for the individual and the evolution of institutions of continuing education. A great deal has been discovered about the process of learning itself and its highly personalised character. The

boundaries of the well established disciplines of the past have given way to inter-disciplinary teaching and research. New technologies have begun to be used widely both to enrich the quality and enhance the reach of education.

1.7 In any country, the goals of societal development reflect the aspirations of its people. In India these goals are enshrined in the Constitution which envisages a society based on "justice, social, economic and political; equality of status and of opportunity" and it enjoins the State to endeavour to promote among all citizens, "fraternity, assuring the dignity of the individual and the unity and integrity of the Nation." The constitution also underscores the country's commitment to socialism, secularism and democracy.

1.8 The goal of independence was achieved in India through a prolonged struggle, during which, the far-sightedness of the leaders of the freedom movement resulted in the concretisation of socio-economic goals to be achieved after freedom. This vision envisaged the building of self-reliant nation through optimal utilization of the resources in men and materials, and the establishment of an egalitarian and tolerant society. It has been an article of faith amongst the policy planners in India that while economic strength and vitality determined the scope and quality of political freedom, for millions, the quality of freedom depends on the enhancement of production being accompanied by an equitable distribution of goods and services. This, it is recognised, is possible only through the expansion, dispersal and diversification of employment. In human terms, democratic development implies the availability of equal opportunities to all people, irrespective of caste, creed, sex and religion to develop their personalities. It implies access to knowledge and awareness of particular fields of Arts, Sciences and Humanities as also of values and tradition. It needs to be emphasised that the Indian polity has been characterised by a concern for the individual, not as a mere instrument of development but more essentially as an end in himself. In the Indian context, the concept of national development goes far beyond economic growth; it is

concerned equally with the development of a self-confident individual, with a strong commitment to democratic values, concerned with the creation of a nation united in purpose out of people speaking different languages, professing different religions and rooted in a variety of cultures. In a society which has chosen the democratic, rather than the totalitarian path of development, education has to be the main-stay of all national endeavours.

Role of Education

1.9 To achieve the multiple but interdependent goals of personal, economic, social, political and cultural development, it is necessary to make appropriate provision for integrated programmes of education for people who happen to be living at different levels of personal and economic development, possessing different linguistic, social and cultural attributes. Such programmes will have to have a common core curriculum to strengthen unity within diversity and also to facilitate mobility from one part of the country to another.

1.10 To enable the education system to play its role effectively in the process of national development, along democratic lines, it is essential that besides ensuring that all people get the benefit of education, it should also be arranged that the level of educational attainments among people would not be too disparate between sexes, among social groups and across geographical regions.

1.11 If adequate measures are not taken for the spread of education, the chasm of economic disabilities, regional imbalances and social injustice will widen further, resulting in the building up of disintegrative tensions. Through proper education, the achievement of economic and social development can be facilitated and expedited. Human resource development has a multiplier effect on the utilisation of all other resources. That is why the concept of education as an investment in development has been increasingly accepted, and that is

why, in 1966, the Report of the Education Commission (1964-66) referred to education as the only instrument of peaceful social change.

Priorities in Educational Development

1.12 Elementary education is the most crucial stage of education spanning the first eight years of schooling and laying the foundation for the personality, attitudes, social confidence, habits, learning skills and communicating capabilities of pupils. The basic skills of reading, writing and arithmetic are acquired at this stage. Values are internalised and environmental consciousness sharpened. This is the stage when physical growth can be assisted, interests in sports and adventure can be roused, and manual dexterity can also be developed. If a child goes through good education at this stage, he never looks back in life for he has been prepared to exercise his initiative to overcome difficulties.

1.13 Many studies have shown that in the field of education, investments in elementary education yield the highest rate of return and have a significant impact on productivity and the general well being of the masses. The crucial role of universal elementary education for strengthening the fabric of democracy through the provision of equal opportunities to all for the development of their inherent individual potential, has been accepted from the very inception of our Republic in the form of Article 45 under Directive Principles of State Policy in the Constitution. This was reiterated in 1968, by the Resolution on the National Policy on Education. Removal of Adult Illiteracy has also been accepted as an imperative goal to be achieved through the implementation of broad-based, functionally relevant educational programmes. This is chiefly because literacy in its wider connotation ensures the awakening of the participant's interests in his environment and in processes and practices which can increase his productivity and greatly enrich his personal life. Almost all countries which have adopted a democratic form of government, have devoted pointed attention to the objective of

achieving universal literacy through a mass movement involving the entire administrative and political apparatus and utilising the services of voluntary organizations, and indeed, of every educated person. Vocationalisation of the higher secondary level of education and vocational training through special institutions are also considered essential to provide manpower for economic growth, particularly for the maintenance of the infrastructure and for production technologies. In many ways the vocational dimension of education provides the link between the production function, employment and educational processes. In the process of imparting vocational skills, the school system has to be integrated with its immediate environment and the community in which it is located.

1.14 Higher education has been given a place of special importance because it can provide ideas and men to give shape to the future and also sustain all the other levels of education. The quality of life and pace of development of any nation depends on the ideological climate; the widespread perceptions of history, culture, tradition and values; and the feeling of confidence in human capability to overcome material, social and spiritual problems of living. Higher education, and the intelligentsia nurtured by it, have a special role in determining the quality of the overall environment. Higher education also supplies a wide range of increasingly sophisticated and ever-changing variety of manpower needed in industry, agriculture, administration and services. The self-reliant and indigenous character of an economy can only be maintained when competent people are available to foresee, plan and execute research and development activity, necessary to keep India abreast of developments elsewhere in the world.

1.15 Equity, quality and relevance are of particular significance in planning the development of the education system. The report of the Education Commission (1964-66) laid stress on this aspect in the following words:

'Quantitatively, education can be organised to promote social justice or to retard it. History shows numerous instances where small social groups and elites have used education as a prerogative of their rule and as a tool for maintaining their

hegemony and perpetuating the values upon which it has rested. On the other hand, there are cases in which a social and cultural revolution has been brought about in a system where equality of educational opportunities is provided and education is deliberately used to develop more and more potential talent and to harness it to the solution of national problems. The same is even more true of the quality of education. A system of university education which produces a high proportion of competent professional manpower is of great assistance in increasing productivity and promoting economic growth. Another system of higher education with the same total output but producing a large proportion of indifferently educated graduates of arts, many of whom remain unemployed or even unemployable, could create social tensions and retard economic growth. It is only the right type of education, provided on an adequate scale that can lead to national development; when these conditions are not satisfied the opposite effect may result".

Limitations of the Education System

1.16 It seems appropriate that a discussion on the role of education in general, and various levels of education in particular, should be followed by a recognition of the limitations of the education system. Otherwise, the education system might be blamed for shortcomings beyond its control. An education system does not operate in a vacuum. It is greatly influenced by the characteristics of the environment. Education cannot maintain its excellence or its democratic character unless the policy makers, planners and administrators are willing and able to support its thrusts in these directions. Neither the human nor the financial resources would be forthcoming for supporting educational initiatives unless these decision makers are convinced that education is a crucial input for future development.

1.17 Educational planning can start in a meaningful fashion only when the decision makers in a society have spelt out its quantitative, qualitative, spatial and temporal objectives and also enunciated the manner in which the demands of equity and excellence would be met and the priority that would be accorded to them within the tight constraint of resources. While deciding these fundamental issues, alternative scenarios have to be considered in the light of constraints not only of financial resources but also of the political,

social, cultural and organizational milieu. Since education is concerned with the future, its organisation has to be deliberately and purposefully forward looking and reasonably protected from the rough and tumble of current populist politics. This cannot be ensured by educational planners alone. The consensus and the will for protecting education has to be created by opinion makers and leaders of public life.

1.18 While the content and methodology of education can be determined on a priority basis for the development of individual personality, in so far as the specific tasks in respect of technological, economic and societal goals are concerned, education must respond to the imperatives flowing from the nature and direction of national development.

1.19 It must be recognised that every policy framework inevitably carries a price-tag with it. If the cost of universalisation of education or the building of institutions of excellence has an expensive price-tag, a much heavier price has also to be paid for the default option of "no change".

1.20 There is no denying the fact that India has made considerable progress since Independence in terms of increase of all types of institutions, volumes of enrolment and the sophistication and diversification of educational programmes. It has, however, not been possible to meet the nation's aspirations in respect of overall coverage, equitable distribution and quality of education.

1.21 There is no gainsaying the fact that, at its best, school, college and university education in India has produced scholars, engineers, technologists, doctors and management personnel of a quality comparable with the very best products of the best universities of the world. However, it is also true that, against this small minority of quality products, the preponderant majority come out of institutions of higher education, perhaps with a little more of book learning and of course a degree, but with very little

capacity for self-study, poor language and communication skills, a highly limited world-view and hardly any sense of social or national responsibility.

1.22 Even amongst the gifted, with their sharper perceptions, who get the opportunity of studying in institutions of excellence like the IITs or IIMs or the Medical Colleges, at very little cost to themselves, there is no evidence of the expected commitment to social responsibility. The same applies to the products of better quality schools. In fact this problem at the school level is even more acute because few elite schools concern themselves with developing a sense of social obligation amongst their pupils. The result is that not only an opportunity has been lost to create in the students, during their formative years, sensitivity to pain and poverty but the result is a kind of snobbishness which distances the products of these schools from the realities of their environment.

1.23 No description of the contemporary educational scenario can be complete without a reference to the examination system since it decides, not only the fate of students, but also the content, orientation as well as the quality of education at all levels. Apart from evaluating examinees on the basis of rote learning and memorising, their annual periodicity creates an environment in which students tend to while away their time for most part of the year and gear themselves to work for the last three or four months. For obvious reasons, lack of continuity in application results in the building up of unbearable pressures at the end of the year which find expression in boycott of examinations, leakage of question papers, mass-copying, payment of bribes to evaluators and other unethical practices. Consequently, degrees and grades do not generally command credibility as a whole with the public as well as employers in the public and private sectors and the whole process of higher education has become warped, disoriented and dysfunctional, producing a large number of unemployable young men and women.

Values and Modernity

1.24 Thoughtful people in all walks of life are greatly disturbed by a progressive erosion of values and the resultant pollution of public life. The fact that this crisis of values is as pervasive in schools, colleges and universities, amongst teachers as well as students as in other walks of life, is seen as a highly dangerous development. It is, therefore, being urged that the process of education should be reoriented and young people should be made to realise that exploitation, insecurity and violence cannot be contained nor can an organized society be sustained without adhering to and enforcing some norms of social, political and economic behaviour. Learning from past experience, it is expected that a coherent and an operationally viable value system would be inculcated through educational processes, based upon rationality and a scientific and moral approach to life.

1.25 Despite the cultural cohesion which has characterised the Indian sub-continent for centuries, India's political unity got established only through the struggle for independence. This sense of national integration has recently been under considerable strain because of divisive forces arising from caste, religious and regional considerations. Therefore, there is a widespread demand that effective counter-measures must be taken to educate people about the freedom struggle, the value of national cohesion, the danger of communal and caste fragmentation and the need to strengthen the composite culture of India to which people with diverse backgrounds have contributed. It is felt that the present scenario is an indication of the failure of the education system and at least, from now onwards, every effort should be made to see that the coming generations will be immunised against separatist tendencies.

1.26 Neither an individual nor a nation can survive without a sense of self-confidence and pride. It appears that very few people know that as Indians, they have a great deal in their past and present to justify their feeling equal to anyone in the world and striving to

match their performance with the very best people in the developed countries. India obviously cannot enter the twenty first century with a bowl-in-hand psychology. Immediate efforts must, therefore, be made to bring home to the young their duty to realise their full potential.

1.27 There is a strong feeling in the country that the mass of young people leaving schools, colleges and universities continue to regard manual activity and vocational employment as something inferior to the most routinised clerical work. In a society seeking to move into the world of modern technology, this essentially feudal attitude can be a terrible handicap. Developed countries have moved far away from such inhibitions and Indians too must shed such outmoded notions. This can be achieved only by ensuring that no one will be able to complete his schooling without having to work usefully with his hands and imbibing the concept of dignity of labour.

1.28 It is becoming clearer everyday that if India has to maintain even its present status amongst nations, it must, in addition to cutting down drastically on the rate of growth of population, arrange to ensure that a large enough section amongst the coming generation will have the capability to deal with the technological revolution already transforming, not only the modes of production, transportation, communication and management, but also behavioural patterns as well as organisational systems and the cultural milieu. The existing centres of excellence in higher education must be modernized and new ones established to take care of our critical requirements of enlightened, sophisticated and creative manpower. It must also be ensured that the total environment is also transformed through widespread diffusion of a modern and scientific outlook. Without a qualitative change in the environment, centres of excellence will be smothered by the sheer mass of a tradition-bound, slow moving, and generally passive population.

1.29 It has been noticed that the vast majority of students are not exposed to challenges which would develop their potential for creativity and innovation because the whole system of education is

characterised by class work and examinations which emphasise rote learning and repetitive exercises. Undoubtedly, this will require the overhaul of pedagogic methodology as well as the curricula and textual materials. These, however, will not be enough. Something will have to be done to change the orientation, work-ethic, knowledge and skills of the teachers, who will have to function much more creatively in a learning rather than a teaching environment, in which they will have to struggle continuously with new ideas as well as new technologies.

1.30 When the variety of tasks entrusted to education are taken into consideration, it becomes obvious that total harnessing of the massive nation building potential of our vast manpower will not be possible unless children participate massively in the educational programmes appropriate to their ages. This means that the achievement of universalisation of elementary education is no longer a matter of choice. But achieving universalisation depends not only upon the establishment of greater relevance of educational methodology and content to life, but also on the perception of parents about the value of education. A massive programme for the involvement of the adult population in functionally relevant education will, therefore, have to be launched.

Towards a New Education Policy

1.31 In a constitutional structure in which the States play a crucial role in development, it is necessary to demarcate the responsibilities to be borne by the Central and the State Governments in respect of various aspects and levels of education. This is particularly so, in the context of education now being in the Concurrent List. In this context, the question of overall resources as well as the assignment of these to different levels of administration will have to be considered.

1.32 The initiative to review the present quantitative and qualitative status of education is essentially a reflection of a widespread feeling that many things have changed over the last twenty

years, some for the better and others for the worse. As will be seen in the subsequent sections of this paper, many of the changes required in education were anticipated by the earlier committees and commissions, especially the Education Commission of 1964-66. Perhaps, the problems of today are more the result of tardy and haphazard implementation and a progressive decline in the allocation of resources. It is, therefore, envisaged that the New Education Policy should articulate the educational imperatives not only in terms of objectives, concepts and priorities but it should also spell out an operational strategy with the associated financial, material, organizational and human requirements to achieve the long and short term objectives set forth in the policy. If a radical change in educational policy is agreed upon, equally radical instruments and organizational structures will have to be devised to give it practical shape.

1.33 A National Policy of Education has to emerge from the perceptions, active participation and the wisdom of all those who are likely to be involved in its implementation. The States, local bodies, voluntary agencies, teachers, students and parents, scientists, managers, entrepreneurs and workers, parliamentarians and legislators and indeed the members of the Fourth Estate will have to contribute to the process of policy formulation.

1.34 This paper, which attempts to present the broad approach to various practical and policy issues of education, provides an overview of the present quantitative and qualitative status of elementary, secondary, vocational, higher, technical, adult and teachers education alongwith the strategy and policy alternatives.

CHAPTER II

AN OVERVIEW OF EDUCATIONAL DEVELOPMENT

2.1 In the first Chapter, an attempt has been made to present the linkages between education, society and development. In this Chapter, it appears necessary to describe the achievements which have been secured during the various plans. While in this Chapter only the salient features of what has been accomplished and what remains to be accomplished have been highlighted, a more detailed account of the sectors of education has been provided in the appendices along with a number of statistical tables. The major variables which have been described here are : growth of institutions by levels, enrolment in different educational sectors, retention and drop-out rate, non-formal education, literacy growth, number of teachers and educational expenditure.

Growth of Institutions

2.2 During the last three and a half decades the number of educational institutions in India has increased from 2.3 lakhs to 6.9 lakhs - a three fold increase. A large number of these institutions (5.04 lakhs), constituting 73 per cent of total educational institutions, are primary schools. Over the period 1950-83, they registered an increase of 2.4 times, yielding a compound growth rate of 2.8 per cent per annum. However, the rate of growth of primary schools has been slowing down during the recent years. Furthermore, the growth of primary institutions has not been uniform in all States. Some of the educationally advanced States had launched their educational programmes in the early 'fifties and/or the 'sixties. A large number of habitations in these States have already been covered by primary schools. Hence the growth in the number of institutions has slowed down. On the other hand some late developing States viz. Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh and Uttar Pradesh, can be seen to have registered faster rate of growth during the

'seventies. In terms of the structure of elementary education in the country, while in most of the States the pattern is five year of primary education followed by three years of middle (5+3), in some states the pattern is 4+3, or even 4+4.

2.3 The number of middle schools increased from 13.4 thousands in 1950-51 to 123.3 thousands in 1982-83, thus registering an annual increase of 7.2 per cent. Whereas in 1950-51, there was one middle school for every fifteen primary schools, this ratio had improved to 1:4 in 1982-83. Thus, during the 1950-83 period, the number of institutions dealing with elementary education i.e. primary and middle schools together increased from 2.23 lakhs to 6.27 lakhs, yielding an annual growth rate of 3.3 per cent.

2.4 In the year 1950-51 there were only 7,300 secondary/higher secondary schools in the country whereas in the year 1982-83 the number of such institutions had increased to 52,279. Thus, the number has been growing at the rate of 6.3 per cent per annum. It is important to note that the growth in the secondary/higher secondary institutions has been lesser than that in the case of middle schools. Whereas in 1950-51, there was a secondary school for each 1.84 middle school, this ratio changed to 1: 2.5 by the year 1982-83. However, all the secondary/higher secondary schools are not of a uniform pattern. Some of these follow new pattern of 10+2 (6,030), while others are old pattern secondary schools (3,473). But the bulk of these institutions are high schools (42,776). Maharashtra and Andhra Pradesh alone have about 22 per cent of these institutions.

2.5 The growth of vocational education, as a part of nation-wide uniform pattern, began with the adoption of the 10+2 pattern. By 1976-77, the programme had taken some shape only in three States. However, by 1983-84, it had spread to eleven states and union territories. More than half of the sixteen hundred vocational institutions existing in the country in 1983-84 were in Tamil Nadu, which has been a pace setter in the case of vocational education. Maharashtra with 250 institutions is next in the reckoning.

2.6 The growth rate of polytechnics has been only 6.8 per cent per annum (from 325 in 1975-76 to 515 in 1982-83). The highest number of polytechnics are in Tamil Nadu, followed by Karnataka, Uttar Pradesh and Maharashtra. As compared to these institutions, engineering colleges in the country during the same period increased at the rate of 9.2 per cent per annum (from 108 in 1975-76 to 200 in 1982-83). It is noteworthy that about one-fourth of them are located in Karnataka (48). Next to it is Andhra Pradesh with 26 institutions.

2.7 During the period 1950-83 there has been a rapid growth in the case of pre-degree colleges for general education. As of now, there are 5,246 colleges and 140 universities in the country. The rate of growth of the colleges and the universities has been more than six per cent per annum.

Enrolment

2.8 There has been an all round increase in the enrolment of both sexes at all the levels of education. The total student population increased from 2.8 crores in 1950-51 to 11.4 crores in 1982-83, yielding a growth rate of 4.5 per cent per annum. During this period, girls' enrolment increased at the compound growth rate of 5.5 per cent while the comparable rate in the case of the boys was 3.9 per cent per annum. However, due to the initial disparity in the enrolment of boys and girls, the absolute magnitude of girls' enrolment is still less than the boys' enrolment. In enrolment, the performance across the different levels of education and in the various States and Union Territories has not been uniform. One needs to examine enrolment by levels and separately for male and female students.

2.9 When one examines the inter-Census enrolment rates from 1951 to 1981 for each decade, it is found that the growth rate for primary education was 3.2, 5.0 and 2.5 for the 'fifties', 'sixties' and the 'seventies' respectively. There are several factors which must be kept

in view while examining these growth rates. Firstly, with each decade the base of student population has been increasing and consequently even for the same magnitude of additional enrolment the rate has to be smaller. Secondly, when the access to education was improved immediately after independence, a sizeable stock of population responded to the growing educational opportunities. However, with passing of time, and with wide-spread provision of primary schools all over the country, there has been a decline, in relative terms, in this backlog. Although, the proportion of over-age and under-age pupils in primary enrolment, has been declining over the years, it is still about 25 per cent. If the over-age and under-age pupils are excluded from the rate of growth of enrolment for 1971-81 (2.5 per cent per annum) it comes below the age-specific population growth rate. This implies that the backlog of illiterate population in absolute terms keeps on increasing with time. This has severe implications for universalisation of elementary education.

2.10 In 1960-61, highest enrolment ratio for boys among the major states was in Tamil Nadu while the lowest enrolment ratios were in Jammu & Kashmir, Madhya Pradesh and Bihar. By 1982-83 the picture had changed and except for the States of Assam, Karnataka, Madhya Pradesh and Orissa, almost all other States reported more than hundred per cent enrolment in the case of boys. It may be worth repeating here that these are gross enrolment ratios and hence under- and over-age pupils are included in the numbers enrolled.

2.11 The picture regarding girls' enrolment is similar except for the fact that in 1960-61 least enrolment ratio (16) was found in the state of Rajasthan. Jammu & Kashmir, Bihar and Madhya Pradesh were among the other low enrolment ratio states. But by 1982-83, tremendous improvement had been registered across all the States. The States of Gujarat, Himachal Pradesh, Kerala, Maharashtra, Punjab and Tamil Nadu were notable among the pace setters. Uttar Pradesh with 49 per cent gross ratio was conspicuous for low enrolment of girls at primary stage.

2.12 As the programme of universalisation of elementary education includes education upto class VIII, it is important to take into account the progress made in this sector. First of all, the number of students in the middle stage has increased from 0.26 crore in 1950-51 to 1.47 crores in 1982-83 (5.5 per cent per annum). Although the rate of growth in girls' enrolment has been much faster (8.6 per cent) only 30.6 per cent of girls in the relevant age-specific population have been so far enrolled in this stage. Similar percentage in the case of boys has been 56.3. It may be noted that for each boy 0.63 girls have been enrolled at the primary level, the same figure is 0.51 at the middle level.

2.13 The position of the progress achieved in the case of secondary/higher secondary enrolments is more difficult to describe in simple terms because the pattern of education at this level underwent a structural change following the Education Policy (1968). However, as far as high/higher secondary (Classes IX-X/XI) is concerned, the total enrolment increased from 12.2 lakhs in 1950-51 to 94.9 lakhs in 1980-81, yielding a growth rate of 7.8 per cent per annum. The sex-wise share at this level of education also underwent a substantial change during this period. The girls' enrolment registered a faster rate of growth (10.1 per cent) during the period 1950-81. Whereas in 1950-51 there was only 0.16 girls for each boy at this level of education, by 1980-81 this ratio had increased to 0.42:1.

2.14 The growth in higher education enrolment presents an interesting picture. During the 1950-82 period it increased at the rate of 9.7 per annum. However the decade-wise enrolment indicates that while in the 'fifties and the 'sixties, the enrolment increased at the rate of 12.4 and 13.4 per cent per annum respectively, it increased only at the rate of 3.8 per cent in the 'seventies. Thus, it seems that the rate of expansion at this level is beginning to slow down.

2.15 Higher education enrolments have increased in almost all faculties and specializations. For example, while there has been some decline in enrolment for Arts subjects, enrolment in commerce faculty increased in the last decade. As compared to the enrolment for general education (4.5), enrolment for professional courses has been increasing at the rate of 2.5 per cent per annum. The courses of medicine (39.1 per cent) and engineering, technical and architecture (36.6 per cent) constitute the substantial share in the growth of the professional education. The growth in enrolment for agricultural and veterinary sciences has been of the order of 5.4 per cent and 2.6 per cent per annum. The growth in enrolment in teacher training courses has been 2.6 per cent per annum; girls' enrolment in teacher training grew much faster, at the rate of 5.1 per cent per annum.

2.16 During the period 1960-83, enrolment in engineering courses increased from 43,000 to 112,000 students i.e., 2.6 times. Although enrolment of girls increased seventeen times, its absolute magnitude continued to remain about five per cent of the male enrolment. The states where male enrolment in engineering registered appreciable increase are Andhra Pradesh, Assam, Karnataka and Uttar Pradesh. The case of Karnataka is quite exceptional - the total engineering enrolment increased in the state from less than five thousands to more than twenty thousands, an increase of more than 8 per cent per annum.

2.17 In addition, several states have registered impressive increases in enrolments in polytechnics, and technical and industrial arts and crafts schools. States like Andhra Pradesh, Karnataka, Rajasthan and Uttar Pradesh have leading figures of enrolment in polytechnics. As compared to this, Andhra Pradesh, Gujarat, Jammu & Kashmir, Maharashtra, and Punjab have registered tremendous improvement in enrolments in technical and industrial arts and crafts schools.

2.18 There has been a substantial increase in the enrolment at all levels of education and in almost all the faculties. However, it seems that additional enrolment at the primary education has now to

come from social strata which is not in a position to take advantage of expanding educational opportunities, indicated among other things by the deceleration in the growth of enrolment. Thus, with the slowing down of additional enrolment it seems that the first phase of educational expansion during the post-independence era has come to an end. Further expansion would require major structural changes in the educational planning and management. As regards enrolment of girls there has been a considerable improvement in their access to education. However, it has not been sufficient enough to correct the initial disparity. Further educational expansion is contingent upon narrowing down of the gap which exists in the enrolment of boys and girls.

Retention and Drop-outs

2.19 It is important to examine school retention rates as they represent the real gains made by expanding facilities. Information in this regard is not available in sufficient detail. Notwithstanding this, some observations are made here on the basis of whatever little evidence is available. At the primary level, the retention of boys is improving although at a very slow rate. The retention rate for classes I to V improved from 33.5 in the case of 1968 batch to 38.6 per cent for 1974 batch. This trend is further confirmed by the data on cohort-wise primary school graduates. However, most of the gains in retention have been secured since the 'seventies.

2.20 Alternatively, the effectiveness of enrolment can be judged by examining drop-out rates. A state-wise analysis of drop-outs for the period 1964-65 to 1979-80 suggests that a marginal decrease (of seven percentage points) has been registered over the years. In Assam, Bihar, Karnataka and Uttar Pradesh the drop-out figures are on the higher side. Kerala has the least drop-out rate. Even States like Jammu & Kashmir, Himachal Pradesh and Haryana have now a much less drop-out rate. But in most of these states, improvement has been registered from the early 'seventies. However, Uttar Pradesh is an exception, in the sense that the drop-out rate in that State is not



only on the high side but it seems to have increased during the last few years.

2.21 Low retention and high drop out rates continue to erode the gains from educational expansion. The magnitude of wastage is emaciating the educational development in the country.

Non-formal Education and Literacy

2.22 The efforts of spreading education in the populace did not get confined only to formal schooling, although for understandable reasons the latter continued to be the bed-rock of educational edifice. In this context the non-formal education has been called upon to play an important role. It focusses on pupils in the age group 9-14 years who can either not join regular schooling or drop out prematurely.

2.23 It was during the Sixth Five Year Plan that relatively more emphasis was laid on non-formal education for elementary age-group. The data available for 1982-83 indicates that a substantial progress has been made towards the opening of non-formal centres as well as promoting enrolments therein. In the educationally backward states alone, which were the focal point of the non-formal education programme, more than sixty eight thousand centres have been opened for this purpose. About ninety per cent of these centres are for primary education while the remaining are for the middle level. It is the states of Madhya Pradesh and Uttar Pradesh which have most of the middle level centres for non-formal education. Other states mostly have non-formal education centres for primary level education. The distribution of non-formal education centres is concentrated in Uttar Pradesh (16.6 thousands) and West Bengal (15 thousands), which account for more than fifty per cent of the non-formal centres providing primary education.

2.24 In these centres 14.7 lakh students were enrolled across the nine educationally backward states. Of these ninety two per cent were at the primary level and remaining were at the middle level. On an average, each non-formal education centre for primary education had nearly twenty students while for the middle level it was fifteen. Uttar Pradesh had the largest number of students (4.35 lakhs) under the non-formal programme.

2.25 The literacy rate during the post Independence era increased from 16.67 in 1951 to 36.23 in 1981. The number of literates thus increased four-fold from 6 crores in 1951 to 24.8 crores in 1981. There is glaring disparity between male and female literacy, the former being 46.9 per cent and the latter 24.8 per cent. This is more accentuated in rural areas (40.8 and 18 respectively) than in urban areas (65.8 and 47.8 respectively). Kerala had the best literacy percentage (70.4), while the lowest percentage was in Rajasthan (24.38). Only 5.46 per cent of the females in Rajasthan were literate.

2.26 Adult education, particularly in the productive age group of 15-35, had been included as part of the Minimum Needs Programme in the Sixth Plan. Nearly two lakh centres have been opened all over the country with a coverage of fifty eight lakh population as in March 1985. The State-wise distribution indicates that Maharashtra, Tamil Nadu and Karnataka have registered fairly high rates of enrolment. As compared to these, Andhra Pradesh, Assam, Himachal Pradesh and West Bengal have reported rather low enrolment under the Adult Education Programme. Notwithstanding all these measures, the total enrolment under Adult Education Programmes at the end of the Sixth Plan is approximately 2.3 crores, which calls for strenuous efforts to ensure enrolment of the remaining 8.7 crore illiterates in the age group of 15-35 under functional literacy programmes to achieve the objectives of removal of illiteracy in this age group by 1990.

2.27 According to World Bank estimates, India would have the largest concentration of illiterate population in the world by the year 2000 AD; the country will have 54.8 per cent of world's illiterate population in the age group 15-19. This indicates roughly the magnitude of illiteracy in the country and the urgency and importance that should be attached to removal of illiteracy in the context of taking the country to the threshold of the twenty-first century. It is in this context that major emphasis is being laid on non-formal and adult education.

Teachers

2.28 During the 1950-83 period, the total number of teachers increased from 7.5 lakhs to more than 32 lakhs, yielding the growth rate of 4.6 per cent per annum. While the number of primary school teachers increased at the rate of 3 per cent per annum, the highest rate of growth was registered in the case of the middle school teachers (7.5 per cent). At each level of education the increase in the number of female teachers was faster than that of the male teachers. The percentage of the trained teachers increased from 56.1 in 1949-50 to 88.4 in 1982-83. The data indicates that during 1971-72 to 1982-83 there was not much change in the teacher-pupil ratio at the level of primary schools. In the case of middle schools the teacher-pupil ratio has worsened a little.

2.29 The level of qualifications of the teachers has improved and it could be the basis for improving the quality of teachers. Between 1951 and 1978, the proportion of teachers employed in elementary schools who had passed the first degree examination increased from 1 per cent to 17.2 per cent. Conversely, the proportion of teachers with less than matriculation decreased from 34.4 per cent in 1951 to 22.7 per cent in 1978.

Expenditure

2.30 Educational expenditure of all types and all levels has been growing along with the expansion of the system. In 1950-51, the amount of expenditure was Rs. 114.3 crores, while by 1976-77, it had increased to Rs. 2304.16 crores. The budgeted expenditure for 1982-83 was Rs. 5185.9 crores. Among the states the percentage of budgeted expenditure on Education to total State Budget ranged from the lowest of 12.7 per cent in Sikkim to 36.1 per cent in Kerala. The per capita budgeted expenditure on education was the lowest in Uttar Pradesh.

2.31 Education is the second highest sector of budgeted expenditure after the Defence. A little more than three per cent of the Gross National Product of the country is spent on education. It may be pointed out that the total educational expenditure consists of both plan and non-plan. Broadly speaking, the former denotes the developmental expenditure consisting of expenditure on new schemes/programmes, while the latter denotes generally the maintenance expenditure on on-going schemes/programmes. For the year 1982-83, the total budgeted expenditure of Rs. 5185.9 crores consists of 15.7 per cent expenditure under plan and the rest is non-plan. However, it may be noted that during a five year plan, the ratio of plan to non-plan expenditure keeps on increasing as one moves from first year to fifth year of the plan.

2.32 In comparison to many countries, India spends much less on education in terms of the proportion of gross national product. The data indicates that the proportion of gross national product spent on education in many countries ranged around 6 to 8 per cent. While as mentioned above in India it is slightly more than 3.0 per cent. There are only a few countries in South Asia like Burma, Pakistan and Afghanistan which spend a lesser proportion of their gross national product on education than India. It may be recalled that the Education Commission (1964-66) had recommended that this should be increased to the level of six per cent.

2.33 In each successive Five Year Plan, the outlay and expenditure on education showed an increase over the previous plan. In the First Plan it was Rs. 169 crore; in the Sixth Plan it had increased to Rs. 2,524 crores. The share of elementary education in the Plans has been varying across a wide range from fifty five per cent in the First Plan to 36 per cent in the Sixth Plan.

2.34 In 1950-51 expenditure on primary sector of education constituted the largest proportion (43 per cent). It was followed by expenditure on high/higher secondary sector (29.7 per cent). Thus, these two sectors accounted for nearly three-fourths of the educational expenditure at that point of time. By 1976-77 the share of primary education in expenditure had declined from 43 per cent to 27 per cent. While the share of high/higher secondary schools registered a marginal increase from 29.7 per cent to 31.7 per cent and their combined share declined to about 60 per cent. The largest increase in educational expenditure was registered by middle schools, the share for this level doubled from 9.9 per cent to 20.7 per cent. Other sectors registered only marginal increases.

2.35 Seventy-five per cent of the recurring educational expenditure has been on salaries while another ten per cent is spent on the salary administration. However, in some states like Andhra Pradesh, Bihar, Himachal Pradesh, and Kerala, the salary component was as high as eighty per cent of the educational expenditure. Consequently, all other items of expenditure get reduced to a minor share in the total budget across all the States.

2.36 In spite of the fact that educational expenditure continues to be the highest item of expenditure next only to Defence the resource gap for educational needs is one of the major problems. Most of the current expenditure is only in the form of salary payment. It hardly needs to be stated that additional capital expenditure would greatly augment teacher productivity because in the absence of expenditure on other heads even the utilisation of staff remains low.

Differential Outreach and Amenities

2.37 The share of educational expenditure has been gradually getting balanced in favour of the rural areas. In 1950-51 rural areas accounted for only thirty five per cent of the total educational expenditure, while as per the latest figures their share of educational expenditure has increased to forty four per cent. It is, however, clear that the allocations to the rural areas need to be further increased.

2.38 The enrolment ratios of the scheduled caste students have improved in every state. The data available for the last five years (1977-83) indicate that their enrolment has registered substantial improvement. However, it is the male scheduled caste students who have made more progress than the female students. During the period 1977-83, their enrolment ratio increased from 98 to 115 whereas similar figures in the case of female students were 51 and 66 only. This gap is even more in the case of enrolments at the middle level. In the case of scheduled tribe students, the enrolment ratios generally follow the same pattern with two caveats: the total magnitude of enrolment ratio is low; and the disparity between the girls' and the boys' enrolment is wider.

2.39 Among the scheduled castes, the highest rate of literacy is found for males in urban areas (47.5) and the lowest is for females of rural areas. Similar pattern is observed among the tribal population, although in their case the extent of female literacy in rural areas is still lower (6.8 per cent).

2.40 The gap in retention rate between scheduled caste students and general population is gradually improving. For 1968 batch it was 27.8 and 35.3 for scheduled caste and general population respectively; it was reduced to 35.6 and 40.5 for the 1974 batch. However, the relationship between retention rates of tribal students and other communities has remained the same. Statewise analysis of retention rates of scheduled caste and scheduled tribe students indicates that

at the primary level the rates are low, while at the middle level they are better. States like Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Uttar Pradesh and West Bengal have particularly low retention rates at the primary school level, while, Kerala, Himachal Pradesh and Haryana have quite high retention rates. The trend is similar at the middle stage of education except for the State of Karnataka which shows some improvement.

2.41 Many primary and middle schools do not have even the basic facilities. For instance the Fourth All-India Educational Survey(1978) indicates that about 9 per cent primary schools were without any building. Large number of such schools were in Punjab (36.2%), Bihar (18.4%), Uttar Pradesh (15.0%) and Orissa (12.5%). Needless to say that in the absence of school building, many other amenities would also not be available in these schools. For example, at all-India level only 60.3 per cent of the primary schools had black-boards. Only 29.5 per cent of schools had any kind of library facilities and about 46.6 per cent of the schools had play grounds. However, the distribution of these services across the states varies. For example, only 21.5 per cent of the primary schools in Assam had black-boards, only 6 per cent of the primary schools in West Bengal had library facilities and only 16 per cent of Bihar's primary schools had any play ground. In some states even such basic amenities as drinking water were yet to be provided. For example only 21 per cent of rural primary schools in Madhya Pradesh had drinking water facilities. These deficiencies were found even in high/higher secondary schools. For example, only 92 per cent of West Bengal's higher secondary schools had drinking water facilities. Generally, these deficiencies are accentuated in rural schools; as many as 89 per cent of primary schools, 70 per cent of middle, 27 per cent of secondary and 11 per cent of higher secondary schools in rural areas did not have urinal/lavatory facilities.

Employment Interface

2.42 Among all the development interlinkages, the relationship between education and employment is of greater significance. To a

large extent the growth and development of education is tied up with employment and work. Since a large proportion of Indian labour force is either illiterate or is only marginally educated, most of the educated labour is concentrated in only a few selected occupational groups. During the period 1961-82 the employment in the organised sector increased at a compound annual growth rate of 3.2 per cent. When we focus on employment in the organised sector by industrial divisions, it is found that the share of services which was 33.1 per cent in 1961 increased to 41.8 per cent in 1982, registering an annual increase of 4.4 per cent, as compared to the overall increase of 3.2 per cent.

2.43 Ever since the attainment of Independence, public sector has played an immensely important role in India's socio-economic development. It has in the process emerged as the largest employer of the educated manpower. In view of the fact that the state is also providing for the development of education in the country, it is expected that education-employment linkages would be mutually compatible. The latest data indicates that in 1978 there were 1.5 crore employees working in the public sector. They constituted approximately 60 per cent of organised sector employment and are 5.7 per cent of the total labour force of the country.

2.44 The growth in public sector employment has neither been uniform across all occupations nor has it been even through the years. Hence the structural pattern of occupation and the way it has changed over the years is a significant aspect which needs to be examined by educational planners. Moreover, the spread of education in different occupations and the varying pattern of its utilization needs to be studied in detail. In broad terms, one can state that the distribution of public sector employees in occupations requiring general and specific education is of the order of two-thirds and one-third respectively. However, it does not mean that all employees of the public sector had the requisite level of education. The data reveals that as many as 58 per cent workers in occupations requiring technical knowledge/skill did not possess any formal education and/or

training. Similarly, 24 per cent of the workers engaged in the health based occupations did not have any formal education and/or training.

2.45 The occupational categories in which employment increased are important from the educational point of view. The professional and technical category (occupational code 0 and 1) have registered the largest increase. Out of the total increase in employment during the last two decades, 45 per cent can be attributed to this category. Teachers constituted a large segment within this category. As compared to this, the employment in the unskilled categories in the public sector decreased while the clerical and production process categories witnessed only marginal increases. The employees in the production process category were largely holding diplomas and certificates from ITIs and polytechnics. In other words, demand for education in public sector seems to have been more in the professional and technical areas, requiring general higher education, and to some extent, diplomas and certificates.

2.46 The distribution of private sector employees in occupations requiring general and specific skills can broadly be classified as one-fifth and four-fifth respectively. Going by the trend of the 'sixties which seems to have continued during the later period, it can be assumed that by mid-eighties this division would have been closer to one-fourth and three-fourth. When one considers educational aspects of private sector employees, an interesting picture emerges. About fifty eight per cent of the private sector employees engaged in occupations requiring technical knowledge/skill were without any formal education/ training. As opposed to this ninety-four per cent of the employees, working in the occupational categories requiring general knowledge/skill, have been formally educated and/or trained.

2.47 To the extent that the percentages of workers having formal education/training are same in the public and private sector across both occupational categories, it implies that major difference between the use of educated persons in the two sectors follows from their pattern of occupational structure rather than public/private nature of

the undertakings. Though, apparently, there is a drastic difference in the occupational pattern between the two sectors, difference within the occupational categories are not significant.

2.48 Data on unemployment of educated persons are available from different rounds of National Sample Survey as well as from job-seekers registered in employment exchanges of the country. The NSS data for 1956-57 reveals that unemployment among individuals with 'graduation and above' level of education, in general or professional and technical subjects, was confined to only four per cent of the males and six per cent of the educated females. As compared to this, the unemployment rate among individuals with matriculation or secondary level education, was higher both in the case of males and the females. In 1972-73, according to the 27th round of NSS, unemployment among male graduates and female graduates showed significant increases over the figures for 1956-57. Seven per cent of the males were recorded as unemployed while it was 10 per cent in the case of females. On the other hand, unemployment in respect of matriculate or higher secondary educated persons, both males and females, showed a decrease over the figures for 1956-57. Similarly, the data for 1977-78, as provided by the 32nd National Sample Survey round, showed further deterioration in the situation. There was a general increase in the percentage of unemployment for all categories of educated persons, whether males or females. In urban areas percentage of unemployment among male matriculates showed an increase from six per cent in the 27th round to seven per cent in the 32nd round, and for females from six per cent to nine per cent. For male graduates the unemployment rate increased from seven per cent in the 27th round to eight per cent in the 32nd round; for females the percentages were nine and sixteen respectively. Among graduates, those who had completed general education fared worse; unemployment for males increased from seven per cent in the 27th round to nine per cent in the 32nd round. On the other hand unemployment among technical and professional graduates was less than five per cent in the 27th round; it increased only marginally in the 32nd round but remained less than six per cent.

2.49 The 32nd round of the NSS also revealed that unemployment situation in rural areas for the educated persons has been worsening over time. Whereas 18 per cent graduates with general education were recorded as unemployed in 1972-73, their percentage increased to more than 19 per cent in 1977-78. Similarly 16 per cent of female graduates with general education were recorded as unemployed in 1972-73 while in 1977-78 the figure increased to 24 per cent.

2.50 Somewhat similar picture emerges from the data of registered job seekers. The number of registered job seekers increased by nearly ten times during the period 1961-81, yielding a growth rate of 12 per cent per annum. Within the category, the proportion of educated among unemployed has increased ever more. They constituted about one-third of the job seekers in 1961 while their magnitude shot-up to one-half of the total unemployed by 1981. In other words, rate of growth of unemployment among the educated was more than the general rate of unemployment.

2.51 Moreover, the incidence of unemployment has not been uniform for persons with different levels of education. It has been changing over years. For example, in 1961 matriculates formed three-fourths of the total educated unemployed; their share declined by 1981 to 55 per cent. The share of those who have passed graduation or more doubled from 9.5% to 18.7% during 1961-81.

2.52 In this Chapter a brief description of the status of educational development has been provided. However, educational achievements, impressive as these may be in terms of their magnitude and diversification, need to be evaluated in terms of the goals the nation has set for itself. Hence at this stage, an appraisal of educational achievements has been indicated in the light of the resources and manpower invested for these during the post-independence period. Such an evaluation needs to be undertaken in the context of inexorable imperatives likely to unfold in the future. A critical assessment raising some of these issues in detail, has been attempted in Chapter III.

CHAPTER III

A CRITICAL APPRAISAL

3.1 The National Policy of Education of 1968 envisaged a radical transformation of the education system to relate it more closely to the lives of the people, provide expanded educational opportunities, initiate a sustained intensive effort to raise the quality of education at all stages, emphasise the development of science and technology and cultivate moral and social values. The goal of the education policy was nothing less than the creation of an ethos that would produce young men and women of character and ability committed to national service and development. That we have fallen far short of these goals is evident enough. In the meantime, new learning needs have arisen from the inexorable march of economic and social growth and progress in science and technology.

3.2 The world of tomorrow which would usher in an information-rich and technology-intensive society calls for new approaches to learning. Developing the capacity to learn would be more important than what is learnt. Life-long and recurrent education would be the order of the day. Information technology is already permeating every sphere of man's activity and even creating the possibility of raising educational aims and modifying learning processes substantially. We look forward in India to a society in which our huge population of a thousand million will be committed to the noble principles enshrined in our Constitution, with the goal of equality of status and of opportunity providing a major thrust for action. We live in a world where communication has abolished distances and to some extent national boundaries as well. It is also a world threatened with environmental and nuclear catastrophies. Education for values has acquired a new dimension and a new urgency in this context. We are, therefore, faced simultaneously with the challenge of having to fulfill two formidable tasks; one of providing quality education to every one to develop his fullest potential and the other of

simultaneously transforming the content and process of education to meet the emerging needs of tomorrow.

3.3 There is in the country a new confidence and a new enthusiasm to face upto challenges and overcome obstacles. The time is, therefore, opportune to make a critical and frank assessment of what we have achieved in relation to what we set out to achieve. We should identify our successes as well as failures. It is only by understanding how and where we have failed or succeeded in the past that we will be able to build a better future. Accepted policies and programmes need to be examined systematically and critically in the light of performance in terms of equity, quantity and quality in the context of objectives assigned and also with reference to new and inexorable imperatives for the future.

3.4 Though our achievements have been substantial in quantitative terms, these have not been enough to provide access for all. For a country like India with aspirations of developing into a highly productive and modern society committed to the distribution of the resultant benefits to all, this is an occasion for a serious introspection. While doing this, it will also be necessary to correlate the orientation of education with the desired direction of social and economic developments in the country.

3.5 Education, with all its ramifications, cannot be altered materially unless the overall socio-political system requires such alterations for its survival. It is time to look more carefully at the mechanics of implementation and devise more effective mechanisms for formulating policies, prioritising tasks, allocating resources, ensuring inter-sectoral coordination, enforcing standards, and arranging for monitoring and evaluation. Policy resolutions, plans and public declarations remain no more than idle promises unless these are accompanied by measures to fulfil what is promised. In the following paragraphs an attempt has been made to critically evaluate the performance of various sectors of education.

Elementary Education

3.6 In spite of a specific provision in the Constitution to endeavour to provide free and compulsory education upto the age of 14 by 1960, and several explicit commitments with regard to the achievement of Universal elementary Education, progress in this sector is far short of the target. In fact, the target itself has been moving farther and farther to accommodate the failures arising from inadequacy of resources or sheer lack of a viable strategy. Of course, it is true that about eleven crore children constituting 76 per cent of the population of the relevant age group are in elementary stage. The country has reached a gross enrolment level of 93.4 per cent at the primary level. These national aggregate figures are impressive but these also hide tremendous disparities between States, sections and sexes. Moreover these are gross enrolment ratios which, if adjusted for over/under-age children show performance of a much lower level. The enrolment is as low as 62.9 per cent in Assam. There are districts where enrolment of girls is as low as 17 per cent (Jalore in Rajasthan), while the enrolment of girls on all India basis is 75.5 per cent. The enrolment ratios for Scheduled Castes and Scheduled Tribes are 93.4 per cent and 81.9 per cent respectively. The enrolment of girls is particularly unsatisfactory in rural areas and among Scheduled Castes and Scheduled Tribes. The overall enrolment position, therefore, cannot be said to be satisfactory despite the apparent achievement in terms of gross enrolment ratio.

3.7 While it is correct that most children have a primary school within one kilometer of their homes, disaggregated data indicate that 1.91 lakh habitations or nearly one fifth of all habitations (9.65 lakhs) including 16.41 per cent habitations with population less than 300 are unserved by primary sections. Where schools exist, 40 per cent have no pucca buildings, 39.72 per cent have no black-boards, and 59.50 per cent have no drinking water. 35 per cent schools have a single teacher to teach 3 or 4 different classes. It is also clear that these teachers cannot possibly look after the diverse interests and variety of educational needs of the pupils. In fact, there are surveys which indicate that many schools

remain without any teacher for varying periods of time and some teachers are not above sub-contracting teaching work to others who are not qualified for this work either by training or by experience. One of the priorities of educational planning has to be the transformation of this bleak picture. It has to be ensured that the rural schools will increasingly match the urban schools in the matter of proper buildings, equipment, sports and hobby centres and an adequate number of trained teachers.

3.8 The courses taught in state run or aided schools are not always related to the child's environment, though in many states, with the help of the NCERT and UNICEF, new and more relevant material has been developed. New methods of teaching science and mathematics, recommended as essential ingredients of the primary curricula, are being ignored in many states; and most of the schools do not have even the relatively inexpensive teaching kits developed by the NCERT. By and large, the methods of teaching are also quite outmoded. Quite often, these encourage memorising the contents of books and repetition of the expected answers. The programme of Work Experience or Socially Useful Productive Work, on which Gandhiji's basic education laid stress, has not been implemented in most schools the underlying concept of which is logically impeccable from the view point of social relevance, work ethic as well as internalisation of knowledge.

3.9 With such schools and with such teaching and with about 40 per cent of the population living below the poverty line, it is not surprising that the growth rate of enrolment in elementary education is tending to taper off. What, however, is even more disturbing, a large number of those who enrol, drop out very soon. Of 100 enrolled, in class I only 23 children reach class VIII. The rest make do with a smattering of literacy or add to the mass of illiterates in the country. It must be emphasised that the schools where the majority of children study, whether in towns or in rural areas, are far poorer in facilities, quality and relevance of education. That is one of the reasons why the dropout rates in these schools are staggeringly higher than in the schools for the elite. Our position in respect of

elementary education, even in comparison with the majority of developing countries, is highly unsatisfactory. If adequate provisions are not made even now for school facilities, requisite number of teachers, restructuring of the curricula and methods of teaching, we will be marching into the 21st century with an unacceptably large corpus of illiterate people. The poor will thus stand doubly deprived. The adults will be living at a low level of subsistence while their children will be condemned to a life of ignorance and squalor. Even for those, who are more happily placed, the poor and the ignorant will be like mill-stones around their necks. Moreover, it is highly improbable that the country will go on tolerating the double deprivation depicted above. To do nothing is to invite tensions beyond the control of law and order machinery. As a democratic country interested in socio-political evolution in a peaceful and orderly fashion, India must firmly rule out the default option.

3.10 The reasons for the present state of affairs in education are self-evident. Perhaps the most important of these is the obvious paucity of resources. While budgetary allocations from plan expenditure for education have gone up substantially over the years, these have not kept pace with the growth in enrolments and rise in prices. As a result, the total expenditure per student per year, by the Centre and the States, has declined in real terms. More than 90 per cent of the expenditure (in some states even more than 98 per cent) is spent on teachers salaries and administration. Practically nothing is available to buy a black-board and chalks, let alone charts, other inexpensive teaching aids, or even pitchers for drinking water. There is no point in continuing with the unsubstantiated argument that it is possible to save the situation with non-monetary inputs. If such an alternative approach is considered practical or viable, those who put it forward must spell it out and convince the country and the educationists that what is advocated is really possible. The provision of minimum outlays required for achieving the constitutional goals in respect of elementary education should be considered a national responsibility. The allocation of the share

between the Centre and the States should not be allowed to cloud the issue.

3.11 A need of tremendous significance, which has been discussed recurrently in educational literature, relates to the creation of a demand for education. Of course, the underlying assumption in this concern is that notwithstanding how poor people view education today, its widespread diffusion upto a minimal level is essential for national well-being. If this proposition is accepted, then it becomes imperative that measures should be taken to create a feeling in the community that their future would be at stake if they do not look after the elementary education of their children. Because of the present apathy, there is total dependence on Government, and consequently, there is hardly any effort on the part of a village or the community leadership or at the level of block or district, to set up or even to help the proper running of schools. It is undeniable that, to a great extent, this is also because the school system is now a part of a gigantic bureaucratic set up which leaves no room for intervention at the local levels and is, in effect, equally frustrating to a teacher with some initiative. If the community is to be involved, to be effective, its involvement will have to be multi-dimensional. Persons in the community with resources, knowledge and skills will have to help in setting up and managing the schools; school children of suitable age will have to participate in community work; and learning experiences including skill development will have to be provided in other establishments, where necessary, if the schools do not have the related facilities. The community will also have to assume responsibility for maintaining the school buildings, and for arranging mid-day meals, uniforms (especially for girls), and books etc., as these would greatly facilitate the retention of children in the schools. This would be facilitated if the community is also authorised to keep an eye on the performance of schools and specially of the teachers. Moreover, its views on curriculum would also have to be taken carefully into account. In the interest of a minimum quality of education as well as the need for national cohesion and inter-regional mobility, a common core curricula fortified with

carefully prepared textual materials, is an inescapable necessity but the core curricula cannot be the totality of the curricula. A sizeable part of it has to be related and built around the local environment and culture.

3.12 A critical appraisal of elementary education unmistakably points to the recognition that the sheer size of the present monolithic system creates an environment of anonymity for the teachers and the individual schools, in which any kind of default or creativity fails to come to notice. The present approach to teaching which lays emphasis only on attendance and memorising can neither retain nor enrich the pupils; improvement in teaching learning processes cannot be brought about in an utterly unsatisfactory physical environment; there is an urgent need to measure performance essentially on the basis of enrolment retention; girls and children of poor and illiterate families need special remedial programmes. To motivate teachers in rural areas, their emoluments, housing needs and other perquisites must be determined as realistically as the measures for disciplining the defaulters and recalcitrants amongst them. An obligation should be placed upon all development agencies functioning at the grass-root level to lend support to elementary education because, through it only, new ideas, behavioural patterns and values can become internalised and rooted deeply in the personality of the coming generations. Last but not the least, the attainment levels and objectives of elementary education should be redefined succinctly, keeping in view the fact that for a large percentage of children formal education will cease after the completion of this stage.

3.13 In the context of elementary education, the new initiative through the Non-Formal Education Programme also needs some mention. This programme started only towards the end of the Sixth Five Year Plan in the nine educationally backward states. It incorporates a much greater measure of flexibility in terms of teacher pupil ratio, qualifications of teachers, timing of classes, speed of learning, etc. Initially, it was conceived to meet the needs of dropouts, especially girls, who, it was felt, could not come to the regular schools because

of other pressures and preoccupations. Now, faced with other constraints, Non-Formal Education is being assigned a very large responsibility in relation to the achievement of Universalisation of Elementary Education by 1990. It is expected that of the additional 64 million children coming up for elementary education, nearly 39 million will be educated entirely through this system.

3.14 To-date, no systematic study of the effectiveness of Non-Formal Education is available. It is being argued by some educational planners that this may not be a viable alternative to school education. There are difficulties in the effective monitoring and evaluation of its implementation. These arguments have to be balanced against the necessity of using some mechanism to reach children outside the formal educational system.

3.15 The role of Elementary Education in fulfilling the basic objectives of nurturing national pride and integration and cultural cohesion, and facilitating internalization of democratic values will depend not only on a common core curriculum but also on the establishment of a national consensus for its adoption and enforcement. Thus far, despite the decision to make education a concurrent subject, there is no way in which an institution or a state system can be made to introduce teaching programmes essential for national goals or personality development, or prevented from spreading ideas which would circumscribe a child's mind within the narrow mould of regional, social or doctrinaire preconceptions. How these problems can be sorted out through legislative action or otherwise is a matter for immediate and careful attention.

Adult Education and Functional Literacy

3.16 One direct result of the failure on front of Universalisation of Elementary Education has been the large numbers of illiterates in the country. Mahatma Gandhi, Father of the Nation, considered illiteracy to be India's sin and shame. In absolute terms, there are more illiterates now (437 million in 1981) than there were

at the time of independence (approximately 300 million). It is nonetheless true that, as a percentage of total population, literacy has made steady progress, so that literates which accounted for only 16.67 per cent in 1951 represented 36.23 per cent of the population in 1981. The national figures regarding literacy, however, present a scenario which hides wide disparities not only among men and women, but amongst regions. The female literacy in rural areas varies from 64.7 per cent in Kerala to 5.4 per cent in Rajasthan. Bihar, Madhya Pradesh and Uttar Pradesh, which account for 38 per cent of rural families in the country, female literacy percentages range between 8.99 and 10.17.

3.17 Undoubtedly much of effort in the field of elementary education and adult education programmes is nullified by a high rate of growth of the population. This, however, underlines the need for a more decisive action particularly because literacy contributes significantly to the acceptance of family planning practices. Even otherwise, the "no radical-change" option has its own unacceptable ramifications. If there is no change in the rate of growth of population and the rate of the spread of literacy, there would be 500 million illiterates in India in the year 2000 A.D. According to the World Bank, in that year, 54 per cent of the World's illiterate population in the age group 15-19, would be in India. Experience of conducting adult education programmes for the last three decades, and its evaluation by independent agencies, has revealed that want of sufficient motivation prevents illiterates from continuous participation in adult education programme. There is no support to the programme from developmental agencies and the involvement of grassroot voluntary agencies and educational institutions has remained marginal. Literacy has not been used and propagated as an instrument of development because the positive nexus between poverty and illiteracy has not been recognized. There is no evidence that the decision makers recognize that appropriately fashioned Adult Education Programmes could serve as effective instruments for converting the country's population from being a drag on development into an engine of development; or that adult education programmes could contribute

specifically and significantly to increase in productivity. In such circumstances, it is understandable that the programme has received short shrift in terms of human and financial resources. No wonder then that 60 per cent of the total work force of 244 million is illiterate and yet employers, even in the organised sectors, have not been called upon to accept responsibility for providing functional education to the illiterates and enhance their value as effective agents in increasing productivity. In this situation, it is natural that the potential of the educated population, especially college and university students has also not been exploited in eradication of illiteracy. The talk of assigning a greater role to NSS and making a minimal performance for removal of illiteracy, a pre-condition for the award of the first degree, has also not received serious consideration. The adult education can only be sustained on the strength of a positive conviction that there is a correlation between literacy and social, economic or political development.

3.18 That removal of illiteracy is possible has been demonstrated by many countries which regarded it as an essential pre-condition for the meaningful participation of the masses in the process of political decision-making and national reconstruction. Whether such a perception would be valid for India has to be decided, after careful consideration, once and for all, so that the type of equivocation which has characterised Adult Education Programmes comes to an end and decisive action gets taken in this regard.

3.19 If the programme of Adult Education is to continue, then a reassessment of the programme from the viewpoint of contents, quality, methodology, appropriateness or otherwise of textual materials and the effectiveness of the post-literacy programmes will have to be attempted. While a view is being taken on the priority to be assigned to Adult Education, it seems necessary to consider the possible impact of the Adult Education Programmes on Universalisation of Elementary Education. There appears to be a definite link between the two. Unesco studies have revealed that an Adult Literacy level of 70 per cent is the critical threshold for Universalisation of Elementary

Education. Illiterate parents are prone to avoid enrolling their children and also take them out if it means any inconvenience to them.

Secondary Education

3.20 There has been phenomenal expansion of secondary education, from 4,000 schools in 1947 to 52,279 schools in 1982-83. If intermediate and junior colleges are added, the number would be more than 56,000. While a fourteen fold increase has taken place in the number of schools, there has been a twenty-fold increase in enrolment from 7 lakhs in 1947 to 140 lakhs in 1982-83, with only a ten-fold increase in teachers, from 93,000 to 9,93,000. It is obvious that, on the whole, schools have grown in size and the teacher-pupil ratios have also been adversely affected. The pressure for expansion will most certainly continue and may indeed increase as the country progresses towards universal elementary education. Today only 22 per cent of the students in the age-group corresponding to classes IX and X are in the school and this ratio is nowhere near that of developed countries. Although anyone in India, who wishes to pursue secondary education is allowed to do so, not more than half of those who pass the elementary stage join secondary classes. The country has accepted the new pattern of 10+2+3. This implies that more and more children will be encouraged to go to secondary schools so that they become familiar with the basic branches of knowledge, including science and mathematics, upto Class X. This is necessary not only to raise the quality of life of the future citizens but also to improve their potentials for development. Large number may join diversified courses especially of the vocational stream in classes XI and XII, so that their entry into the world of work would be facilitated.

3.21 The major challenge before educational planners is to devise an education system that would, on the one hand, meet the growing demand for secondary and higher secondary education and, on the other, ensure that the objective of qualitative viability does not get diluted. The location of institutions becomes important from this point of view. As resources are limited, proliferation of non-viable

educational institutions will have to be avoided. Norms have to be laid down regarding the minimum facilities to be provided to every secondary school in terms of laboratories, libraries, playgrounds etc.

3.22 To meet the ends of equity, it will have to be ensured that opportunity for studying science and mathematics would be available for girls as well as boys, in all secondary schools upto class X, so that all pupils, rural or urban, would be able to exercise equal freedom of choice with regard to professions they would like to pursue. Unfortunately, in many parts of the country, there is an inadequate realisation of this and a discriminatory situation is being created for the scientific and technological professions in favour of the urban and more affluent section of society.

3.23 The variability in the standards of education available in different schools is also a cause of concern. Curricula are also widely divergent. Although the 10+2+3 pattern was accepted as a policy objective in 1968, many states have not implemented this recommendation. Even today, the states of Rajasthan, Punjab, Himachal Pradesh and Madhya Pradesh have not introduced the 10+2+3 pattern although they have agreed in principle to do so. Further, the change of pattern is not a mere arithmetical exercise. It involves the introduction of methods of teaching and evaluation and modernisation of curricula as well as upgradation of standards. The new system is more expensive than the old one. The wastage involved in the present pass percentage of 30 to 40 is high and has to be prevented.

3.24 Higher secondary schools are saddled today with the unenviable task of receiving the cohorts from a less than satisfactory system of elementary education and preparing the pupils for the next stage of life. This cannot be done with an adverse teacher-pupil ratio, outdated methods of teaching, poor laboratory facilities, an uninspiring curriculum and a management system which discourages innovation. Since competence in mathematics and science is likely to be crucial to everyone in the coming decades, this aspect of the teaching-learning process assumes as much importance as the

enforcement of discipline, acceptance of duties set forth in Part IV A of the Constitution, and a minimal capacity for innovation, articulation and participation in production. Except for a few schools, these aspects are being neglected in secondary schools. Hence the need for setting up of pace-setting schools to demonstrate what good instruction and a good curriculum can do to raise the competence of boys and girls for entering the world of work or institutions of higher education.

3.25 Another area which requires attention is the system of examinations conducted by various Boards of Secondary Education. These boards are perpetually the subject of acrimonious controversy for leakage of papers, mass-copying, tampering with results and other unethical practices.

3.26 With regard to what may be described as the "general stream", it should be said that the quality and orientation of teaching is so unsatisfactory even in the best schools that almost all entrants to the Medical or Engineering streams have to arrange for extra coaching. Consequently, many of the teachers make large sums of money by taking up coaching classes even at the cost of neglecting teaching schedule in school hours. In spite of this, because of the high level of politicisation, it is difficult to take action to check these malpractices.

Vocationalization

3.27 Vocationalization of higher secondary education was a major objective of the reforms envisaged in the Education Policy adopted in 1968. However, the attempts made in the past have not borne fruits and enrolment in this stream, which was expected to include around 50 per cent of students at the +2 stage, has remained marginal and confined to a few states. The courses started with little imagination and with poor wherewithal have also lacked in prestige and attracting power. Unless a radical reconstruction can be attempted

with sufficient financial backing, there would be no point in continuing this inherently worth-while experiment.

3.28 The work experience component of secondary education has remained weak. To provide a strong vocational base at the 10+ stage the pre-vocational and work experience programmes in classes IX and X will also have to be restructured. It will also be necessary to find an answer to the crucial question relating to the basis for screening students for entry into the vocational stream. The current prejudice against vocationalization will never disappear if only the less intelligent and academically poorer students are sent to this stream which, at least at present, offers neither a reasonable chance of worthwhile employment nor any advantage in moving upwards into a professional or general programme of education. To an extent the failure of vocational stream is the result of poor linkages between it and industry or opportunities for self employment. Both practical as well as theoretical training in vocational education are best imparted in actual work-situations.

3.29 It has been stated by many experienced teachers that vocationalization within the secondary school system has been a casualty at the hands of educational planners who have no insight into either the opportunities of employment or the type of expertise required for vocational employment. Consequently, in planning for training of teachers, preparation of curricula, selection of courses, all initiatives have been characterised by a lack of professionalism. Naturally, therefore, adequate financial resources have neither been demanded nor provided for starting viable activities in this field. It is paradoxical that while lack of skilled manpower at the middle level is generally perceived to be a major obstacle to raising productivity and economic growth, growth of vocationalization has been stunted from the very inception of the programme.

Higher Education

3.30 There are conflicting views amongst the educationists about the relative importance of school versus higher education. However, it is widely believed that the single most important indicator of a country's future may well be the state of its higher education. The first Prime Minister of India, Pandit Nehru, who laid the foundation of the process of India's modernisation, declared that if all is well with the universities, all would be well with the Nation. Despite the key role assigned to higher education, however, the developments in this field have been extremely uneven. While certain colleges and faculties of universities have played a crucial role in supporting the process of development and modernisation with research work and young men and women of great excellence, the general condition of universities and colleges is a matter of great concern to the nation.

3.31 We have a large system of higher education in terms of absolute numbers. This, however, is because of our large population. Only 4.8 per cent of the relevant age group are enrolled in higher education. The proportion is even more adverse in some regions, particularly for women, scheduled castes and tribes. Rural areas have been touched only marginally by higher education of quality. Moreover, the enrolment pattern is far too skewed in favour of what passes for general education. Efforts to encourage science, technology and other professional courses at various levels have not met with much success.

3.32 The facilities in the 5000 odd colleges vary widely, and are, on the whole, far below the level of qualitative viability. Neither colleges nor even universities are started after due consideration of academic need. For long years, these go on absorbing scarce resources without attaining even the minimum standards laid down by the University Grants Commission. Theoretically, the UGC can refuse grants to these institutions but in practice such a stand involves the risk of confrontation between the State Governments sponsoring them and the Central Government funding

the UGC. The final resolution of such an impasse is usually a compromise after obtaining some token concessions from the sponsors. It will not be denied by anyone familiar with the Indian situation that, notwithstanding the role for upholding standards of education assigned to the UGC, in spite of their efforts, the results have been far from satisfactory. This is unfortunate. Ultimately the students suffer from the imparting of sub-standard education. The UGC must be given full support to discharge its statutory function in this regard, without fear or favour. Universities and colleges are becoming notorious for rampant casteism, regionalism and inbreeding. These institutions, barring a few honourable exceptions, have become virtual battlefields, in which political and other factions, backed by teachers and aided by other staff, often fight pitched battles for power and supremacy. Some Vice-Chancellors spend their entire term of office behind barricades, operating as well as they can, from their houses. The achievement of a university is judged not on the basis of the quality of its research or the competence of its students but by its adherence to the schedule of examinations and the prevention of forced closures.

3.33 The number of effective working days in a year even according to the schedule is far below desired levels. The internal efficiency of the higher education system is extremely low. This is evidenced not only by the poor quality of courses but also by the large number of dropouts and failures which together account for more than 59 per cent of the students enrolled, representing a colossal waste of resources.

3.34 A large number of those who pass the examination are classified under "third division" which is another index of low standards. It is the graduates of this category who inflate the unemployment registers. As with secondary education, examination reforms are urgently needed in respect of higher education as well, since the present system has lost its credibility. A stage has been reached when one university does not automatically give credence to the grading of another university and all the big employers in the

public and private sectors give their own tests to judge the merits of candidates. Efforts made in the past for examination reforms have not made much progress chiefly because the system of internal evaluation is resisted by the teachers as well as students. Teachers oppose it because the periodical evaluation envisaged would force them to work much harder and students oppose it, not merely because they do not trust the objectivity of all the teachers but also because this would mean working the year round to maintain a reasonable level of performance.

3.35 Research in the university system is widespread and is known to be cost effective but major national inputs have gone to laboratories outside the universities. Hence there is great deprivation in terms of facilities for frontline work. It is necessary to correct this situation as without quality research work, neither the culture nor quality of post-graduate education can be improved. Concerted action is needed to change the curricula in line with the expansion of knowledge, using the findings of educational research and technology. Actually, college and university education is often criticised because of an excessive emphasis on teaching which often degenerates into dictation of unrevised notes prepared years ago.

3.36 While institutions like the NCERT and SCERTs are there to evaluate, renew, pre-test and monitor curricula for schools, no such institutional arrangements exist at present for updating the curricula for the universities and colleges. Consequently, arts and humanities continue to offer unilinear programmes of study, without trying to develop courses more closely related to life and the multi-faceted development of the personality and the reasoning and learning capabilities of students. In the case of science and technology education also, courses are designed essentially to explain concepts and basic principles at various levels of abstraction. Adequate supportive arrangements are, however, not always available in the laboratories in the form of kits, apparatuses and instruments to relate theory with practical reality.

3.37 Facilities for corporate life, cultural activities and sports are either non-existent or remain grossly under-utilised for want of rapport and informal contact between teachers and students. In the scenario described earlier, there is hardly any scope for discussions about national issues or values. Because of this, teaching and studying in colleges and universities is no more than a part-time occupation aimed essentially at the award of degrees, which have generally lost credibility and value.

3.38 There is a widespread feeling that the present state of higher education is largely the result of the overt and covert interference by external agencies. Universities, it is argued, should be truly autonomous and accountable. On the other hand, it is also stated as emphatically that, in the present milieu, accountability cannot be enforced since starting a state-sponsored institution represents an irreversible process. No institution or even a course can be closed down once it is started. There is yet another reason due to which accountability must remain a concept without any content. In a formal sense, universities are organised around the office of the Vice-Chancellor. He presides over all the committees and councils and is armed with unlimited emergency powers. In reality, however, the Vice-Chancellor has to function on the basis of a fast dwindling prestige, since he is constantly at the doorstep of government officials for money to keep the university going and, on the other hand, he has to compromise at every step to get his way in bodies whose members are not accountable for the impact of their decisions on the working of the university. The Vice-Chancellor cannot call even an affiliated college to order because the colleges also guard their autonomy with great zest and vigour.

3.39 As with other sectors, resources available for higher education have been extremely inadequate. The needs are immense, for expansion as well as for qualitative improvement. In this context, it is urgently necessary to define the responsibilities of the UGC and the State and Central governments unambiguously so that funding can be

planned in an integrated fashion and the responsibility for maintenance and development of physical facilities, enforcing discipline and looking after the contents and quality of education can be done effectively.

3.40 While the need for stabilising the funding procedures cannot be denied, it has to be admitted that there is no justification for subsidising higher education to the extent it is being done today. The question of raising more resources through increased fees, community subscriptions and contributions from development departments and others using the manpower output of higher education needs serious consideration. It may be appreciated that a large allocation of say a Rs. 1000 crores in any development sector would involve employment of a wide spectrum of manpower, from skilled workers to the engineers, designers and researchers. This manpower cannot be generated by the small budgets of technical institutions or universities. A percentage of the allocation should be spent on manpower development and should be shown as such in project documents and passed on to the education sector for suitable deployment.

Technical Education

3.41 Technical education has made a significant contribution to India's economic development. The programmes which have changed the country and diversified and augmented its production since Independence have been possible largely because of the manpower produced by India's institutions for technical education. Quite a few of the graduates of the institutions have also migrated overseas and are working in frontier areas of technology in several parts of the world. Notwithstanding the well recognized positive achievements, the system has been facing many problems which require immediate attention. First of all, there is the issue of obsolescence of machinery and equipment and the non-availability of the wherewithal to deal with the training and research requirements in respect of new technologies. The industrial sector is coming under increasing pressure of international competition. It has to change rapidly for

sheer survival. This process of change can be accelerated and supported only if, besides being provided with relevant equipment, as and when required, measures are also taken to reorient and enrich the curricula, augment the human resources with new expertise and prepare appropriate instructional materials, textbooks and educational technologies. Besides the highly trained professionals, technicians are equally important since they are the operational instruments for raising industrial productivity. Despite the establishment of Technical Teachers' Training Institutes and the recommendations of various committees, the orientation and quality of polytechnic education remains a major concern.

3.42 The inability of the institutions of technical education to attract good teachers is another major problem which has defied solution for many years. At any point of time, on an average, there are 20 to 30 per cent vacancies in the sanctioned staff strength of degree and diploma level institutions. The better students are not attracted to teach in the technical institutions because salaries and perks in industry are much more attractive. The work ethos in many of these institutions also leaves much to be desired. The interaction between industry and technical institutions, which is so crucial for ensuring relevant quality and cost-effectiveness, remains weak, despite exhortations for closer cooperation. Industrial investment in research undertaken by the institutions continues to be negligible. There is hardly any exchange of personnel or involvement in common projects.

3.43 In the Indian context, technology has to make a major contribution to rural development also. Although there are some examples of excellent work in this area, by and large technical institutions have not concerned themselves, as vigorously as they should have, with the application of modern technology for the benefit of the common man in rural areas. Greater relevance has to be established between the lives of the common people and these institutions.

3.44 There is a wide variability in standards between different types of technical institutions. The IITs, the Regional Engineering Colleges, and the State Engineering Colleges are in altogether different classes. In many states, the entire budget for technical education for supporting many engineering colleges and polytechnics is no greater than the provisions made for a single IIT. There is a widespread feeling that the products of IITs are geared more to the requirements of the international technology market rather than to India's own needs for development. Consequently, the products of these prestigious institutions keep trying, often successfully, to move to developed countries for employment. In a fashion, therefore, the culture and the very excellence of IITs is a contributive factor to the phenomenon of brain-drain.

3.45 The linkage of technical education with manpower planning has remained weak although this is one area where the need for strong linkages is obvious. The Technology Policy Statement envisages rapid modernisation of Indian industry. In accordance with the plans of modernisation and in respect of newly emerging areas where shortages of skilled manpower would be keenly felt, manpower needs have to be identified and educational/training facilities built up in collaboration with industries in the public and private sectors. The quality improvement and faculty development programmes as well as application oriented research needs to be promoted much more extensively than hitherto. In this field again, funds are required to overcome obsolescence and to improve the functioning of the institutions. It has been suggested that the users of technical manpower should be made to pay a cess on their profits to support technical education. Most of this manpower, particularly of the IITs, goes to the organised private sector, which need not be subsidised by the taxpayer. It is also necessary to meet the criticism against ridiculously low fee being charged from students whose education costs several thousand rupees per annum.

Management Education

3.46 Management education is another area of great importance in raising productivity. Apart from the four Indian Institutes of Management, the Master of Business Administration is offered in forty nine universities. There are also a few private institutions offering management courses. The standard and quality of these courses, however, remains highly variable. In the rush to meet the heavy pressure of demand, many institutions have come up without adequate human and financial resources. Management education has tended in the past to focus on the requirements of the private corporate sector and that too in certain selected fields. In view of this, the observations made in the context of technical education regarding the raising of fees to realise the real cost of education, apply with greater validity to management education.

3.47 It is necessary to recognise the relevance of management education in all sectors including such areas as agriculture, rural development, education, health, social welfare etc., so as to generate a positive culture of involvement in developing management alternatives and models to suit the requirements in these fields. Such a recognition will, however, bear no fruit unless the management institutes/departments take up research, documentation, and action research in these areas as a matter of faculty responsibility.

3.48 The networking arrangements between the institutes of management, university departments of business administration and public sector and public and private institutions are practically non-existent. These linkages, therefore, need to be strengthened so that the quality of management education is improved all over the country. Sustained increase in productivity, which is essential for rapid economic growth cannot be achieved without a major thrust in the area of management education.

Teachers and Teacher Education

3.49 Teacher performance is the most crucial input in the field of education. Whatever policies may be laid down, in the ultimate analysis these have to be interpreted and implemented by teachers, as much through their personal example as through teaching-learning processes. We are on the threshold of the development of new technologies likely to revolutionise teaching in classrooms. But, unfortunately, the process of updating the curricula of teacher-education has been very slow. Much of teacher education is irrelevant even to contemporary requirements, leave alone those of the future. The selection procedures and recruitment systems for teachers have also not kept pace with the needs in terms of either number or of quality. So much is expected of the teacher; yet teaching has become the last choice in the job market. We, therefore face a paradox of having better books and research but progressively more indifferent teachers.

3.50 Lest the foregoing statement be considered a wholesale condemnation of teachers, it must be stated that whatever merit there is in the present system, flows essentially from the commitment, hardwork and innovative capacity of a sizeable number of teachers who have become deeply involved in the welfare of their pupils and have, despite the heartaches and the poor rewards available in the system, given their very best to their professional responsibilities.

3.51 The whole question of teachers' selection, role, status, quality and training has been gone into indepth in the two Teachers Commissions set up by the Government of India. In this appraisal, therefore, it is intended to deal with only a few aspects of teachers' performance which impinge directly upon the totality of the educational system.

3.52 It is widely believed, particularly by teachers themselves, that selection of teachers is not based entirely on merit. Consequently, quite a few people, who have neither the inherent

competence nor the aptitude for teaching come into this profession. This happens largely because no screening worth the name is attempted while admitting students to teacher training schools and colleges. The teacher training too is not planned and organized to develop the spirit of inquiry, initiative, scientific temper, manual dexterity, conceptual clarity and linguistic skills for effective speaking and writing which teachers are expected to impart to their students. Adequate attention is also not given to develop communication skills which are crucial to the function of the teachers. The training programme also does not provide for developing receptivity to induction of modern educational aids nor does it impart skills to operate even audio-visual equipment. While it is increasingly emphasised that education should become an instrument of national integration, cultural cohesion and development of humanitarian values, the trainees in teacher training institutions are not exposed to these ideas. No wonder, then, that they should fail to discharge this function.

3.53 In a world characterised by rapid changes in knowledge, technology and management, the teachers by and large, find themselves quite out of touch with intellectual and other forces shaping society. They also have no means of keeping abreast with technical aids for more effective teaching. If they happen to be working in a remote school or college, they are totally cut off from all meaningful debate with their peers. Many teachers never get an opportunity to go to a summer course or an orientation programme and the few who get this chance find that the unimaginative one-way teaching routine they themselves follow with their students is adopted with them also.

3.54 We cannot ignore the experience of the participation of teachers in party politics over the last few decades and the extent to which it has led to the politicization of teachers' organizations. What impact this has had on discipline and on diversion of attention from the time honoured role of teachers need to be evaluated. The merit promotion scheme for university and college teachers did not envisage automatic promotion on the basis of length of service.

However, the manner of implementation of these schemes had led to an expectation that promotions should be based on the basis of length of service. A large body of informed opinion is greatly concerned with the consequences of this development. They feel that once age, rather than erudition and competence, becomes the basis for advancement in career, there will be no incentive left for self-study, experimentation and research and pursuit of excellence, which has, at least theoretically been the concern of universities.

Some General Issues

3.55 Before concluding this critical appraisal, it is necessary to look at certain problems and aspects of education which have a bearing on the overall functioning of the system. In this context, attention needs to be drawn to the inequities of quality and coverage of education among the various social and economic groups in the country. These inequities have wider implications to the extent education has an impact on the outlook, the self-esteem and the socio-economic and political progress of people.

3.56 Even though the rural areas account for three-fourth of the population they are getting much less by way of resources for education than the urban areas. An upswing is, however, noticeable in the relative share of rural areas. In 1950-51 educational expenditure in rural areas was of the order of only Rs. 38.3 crores against the expenditure of Rs. 71.6 crores in the urban areas, representing a rural urban ratio of 0.53. By 1970-71 rural areas accounted for educational expenditure of Rs. 494.6 crores while the expenditure in the urban areas was of Rs. 623.7 crores yielding the rural urban ratio of 0.79. Even so, since the size of the rural population is much larger, the disparities between rural and urban communities are evident even without a detailed analysis. The quality and maintenance of school and college buildings in urban areas is very much better than in rural areas. The number of single teacher schools in kutchha building and the incidence of non-availability of black-boards, drinking water and latrines is also far more in rural than in urban

areas. In fact urban schools generally have better library and laboratory facilities and also far lower incidence of teacher absenteeism. Because of these disparities and also due to considerable differences in life styles and occupations, between the rural and urban areas, the dropout rates amongst urban children is lower than in the rural areas. In terms of access to educational institutions also, urban areas have a great advantage.

3.57 Another factor which accentuates urban-rural disparities is that privately managed "quality" institutions are generally located in the urban areas which, because of the medium of instruction, provides greater exposure to a multiplicity of formative forces on pupils and a far more competitive environment, take away the lion's share of unreserved seats in the prestigious courses in engineering, medicine and management. It has been argued that, despite efforts, it has not been possible to eliminate a cultural bias in favour of urban studies in general and public school products in particular, in the methods used for testing for admission for higher classes or jobs. Continuous monitoring of the persistence of this bias and research into methodologies of eliminating this has to be undertaken in the interest of equity.

3.58 As far as the participation of girls in education is concerned, it is clear that despite considerable acceleration in recent years because of deliberate measures to facilitate their participation, they are still way behind the boys. To a great extent this disparity is more the result of economic and occupational problems and cultural biases of society than the accessibility of educational facilities. Many parents still hesitate in sending girls to co-educational institutions and are particularly averse to those in which there are no women teachers. Even though the performance of girls compares favourably with that of boys, relatively fewer girls seek admission to professional courses, other than those pertaining to medicine, teacher-training and nursing.

3.59 Insofar as the participation of children from the scheduled castes and scheduled tribes is concerned, it is well established that even though the participation of scheduled tribes, except for the states of the North-Eastern region, has not been as high as in the case of scheduled castes, the trend growth for both the communities has been extremely impressive during the last five years (1977-83). Notwithstanding this, the spread of education among the girl students of scheduled castes and scheduled tribes has not been as much as among the male members of these groups. Moreover, this gap between the enrolment across the sexes has been much more in the rural than in urban areas.

3.60 One very significant issue which has to be discussed here pertains to the specifically oriented educational effort essential for reducing those disabilities of scheduled caste and scheduled tribe students which cannot be removed only by the provisions for reservation. In fact reservation of seats in professional courses and jobs fails to achieve the desired results because of the absence of these efforts. It has to be recognised that the majority of scheduled caste and scheduled tribe students are first generation learners and these as well as others who may not fall in this category, often, suffer from the after effects of early childhood malnutrition, a sense of social inadequacy, unsuitable work habits and lack of self-confidence in realising their academic potentials. These factors often militate against their adjustment in the streams of higher education and professional work and their performance vis-a-vis others in a competitive situation. This leads to psychological strain and tension vis-a-vis their peers. While some programmes for enhancing the competence of scheduled caste and scheduled tribe students have been initiated, appropriate steps are still to be taken to ensure that young people from these backgrounds get fully integrated with the others.

3.61 In addition to reviewing inequities from the viewpoint of social and sex bias, it is also necessary to look at the incidence of spatial disparities in education. On the basis of objective criteria,

Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal have been categorised as educationally backward states. It is significant that, in 1981-82, except for Jammu & Kashmir, all these states were spending less than the national average of per capita expenditure on education. Consequently they were lagging behind the other states in primary enrolment per lakh of population. This shows that educational backwardness is related to the volume of expenditure on education. This, in turn, is seen to be generally related to fiscal capacity of the state and more significantly to the level of per capita income.

3.62 While the basic aim of education is development of human potential, its linkages with employment and work cannot be over-emphasised. Unfortunately, the traditional attitudes which have bifurcated knowledge from skills and stratified society on this basis, got reinforced by a colonial system of education, which, for its own ends, perpetuated this divide by imparting knowledge to the elite 'men of letters' and only skills to the general working population. Attempts to move away from these outdated approaches have succeeded to a considerable degree. However, it is still true that liberal arts graduates constitute the preponderant majority. One of the reasons for lack of complementarity between educational initiatives and the job market may be that the organised labour market encompasses only about 10 per cent of the total labour force. For the rest of the labour force educational activities have not been organised keeping in view their role and responsibilities.

3.63 The preset scenario can be described briefly by pointing to the fact that:

- a) Over 50 per cent of the workers in the public sector, in occupations requiring technical knowledge/skills, do not possess the relevant education or training;
- b) 94 per cent of the workers in occupations requiring general education do not possess formal education;

- c) employment in professional or technical categories is growing at a very fast pace, particularly in the service sector;
- d) unemployment amongst graduates in general subjects has been growing at a faster rate than the unemployment amongst high school and secondary levels or technical and professional graduates;
- e) contrary to the popular belief, acquisition of higher degrees does not necessarily lead to better employment;
- f) a major crisis has surfaced for the "educated" vis-a-vis employment in the public and private sectors because, in the national or regional job market, in which students from many universities and hundreds of colleges compete with each other, lack of credibility in respect of grading in examination has already resulted in delinking, if not of degrees, at least of the grading by universities; and
- g) in the I to V, or VI to VIII, or IX to X, or ten-plus stages of education, there is nothing in the school system to increase the students' proficiency for the unorganised employment sector in agriculture or related rural occupations.

3.64 The three major expert bodies at the national level which could play some role in educational planning are the National Council of Educational Research and Training (NCERT), the National Institute of Educational Planning and Administration (NIEPA) and the University Grants Commission (UGC). If the preceding paragraphs in this chapter have any validity, the conclusion that these bodies have not met with the expected response becomes inescapable. Their efforts to improve the content and quality of education, modifying priorities and objectives, and correlating the quantitative and qualitative output of

educated manpower with the requirements of these for various tasks connected with national production and development, have not succeeded mainly because the real initiative for planning is entirely in the hands of State Governments.

3.65 While the overall picture of the availability of resources for education is discussed later in this chapter, it seems relevant to state that any attempt to introduce the rigorous process of planning in education would bring the agency concerned face to face with large demands of money and a situation of conflict with vested interests.

3.66 By definition, planning in education would have to start with an appraisal of ongoing activities and the delineation of goals. It appears that things have gone awry due to progressive centralisation and bureaucratisation and non-enforcement of discipline, standards and performance norms.

3.67 It will also become obvious that worthwhile initiatives in educational processes require an order of outlays far in excess of the left overs which remain after allocations have been made for continuing projects and inescapable new starts for Power, Irrigation, Agriculture, Industry and Communication and Transport sectors. Again, in a country required to modernise and automatise production despite a burgeoning population, the approach to education has to be oriented in such a fashion that it would promote small scale initiatives for setting up centres to facilitate equitable distribution of the gains of economic growth. The setting up of centres of excellence to serve the inescapable need for development has to proceed hand in hand with education for diversified pattern of employment in which the services sector will assume crucial importance.

3.68 Education can make some difference even to employment by increasing productivity through a more meaningful work ethic and improvement of the competence of workers. These results would, however, accrue over a decade or more. Faced with severe constraints of resources, decisions always tend to favour projects and programmes

with a short gestation. The country is now embarking upon a detailed exercise in educational planning because of radical change in the total environment as well as the nature of challenges at home and abroad.

3.69 In the changed context, considerably larger resources will have to be allocated to education to facilitate the system to move away from the present state of drift and ad-hocism. The planning function can be given its due place provided the States, which function at the grass root level, and the Central Government, which has to assume the overall responsibility for the superstructure, arrive at a consensus not only with regard to the goals and processes of education but also with regard to the mechanics of decision-making and enforcement. Once it is recognised that there is more to education than opening of a dozen new colleges or the starting of a few universities or for fighting to hold examinations on time, National and State institutions will have a mandate and a framework for rational planning.

3.70 The question of resources for education has been mentioned a number of times in this chapter. This is chiefly because neither qualitative nor quantitative improvements can be effected without provision of resources. In fact, the resource implications of qualitative changes in education would be far greater than that of mere quantitative expansion because in such an initiative additional per unit requirements for quality upgradation will be needed for new as well as all the existing institutions.

3.71 Taking the example of elementary education, one notices that nearly 95 per cent expenditure incurred is on salaries of teachers and administration, leaving very little for socially useful work programmes, excursions, games and hobbies, science equipment and kits or even simple posters and charts. In these circumstances, even an inspired teacher, with the best of training would have no choice but to fall back on rote learning of texts in all the existing institutions.

3.72 There is very little validity in the view that there has been a significant increase in the resources for education. It is true that from Rs. 114 crores in 1950-51 the total expenditure on education went up to Rs. 2304.16 crores by 1976-77. This figure loses much of its significance, when it is seen in the qualitative context. In terms of per pupil expenditure, the increase in expenditure was over-compensated by increase in numbers and rise in prices. On the basis of constant prices at the 1970-71 levels, in elementary education, between 1950-51 and 1975-76, per pupil per annum availability of resources went up marginally from Rs. 41.9 to Rs. 55.2 registering an annual growth rate of 1.1 per cent. In the corresponding period, per pupil expenditure went down from Rs. 468.9 to Rs. 330.9 for college education and from Rs. 1640.4 to Rs. 890.1 for professional education.

3.73 Since non plan expenditure represents only maintenance costs of the education system, its volume cannot be related to the developmental or expansion aspects of education. This is reflected only in plan outlays. As a percentage of total plan expenditure, taking Centre and States together, the share of education, except for the Third Five Year Plan period, has been declining from one plan to another. In the First Plan, the share of education was 7.2 per cent which declined to 2.6 per cent in the Sixth Five Year Plan.

3.74 Considering the constitutional imperative regarding the universalisation of elementary education it was to be expected that the share of this sector would be protected from attrition. Facts, however, point in the opposite direction. From a share of 56 per cent in the First Plan, it declined to 35 per cent in the Second Plan, to 34 per cent in the Third Plan, to 30 per cent in the Fourth Plan. It started going up again only in the Fifth Plan, when it was at the level of 32 per cent, increasing in Sixth Plan to 36 per cent, still 20 per cent below the First Plan level. On the other hand, between the First and the Sixth Five Year Plans, the share of university education went up from 9 per cent to 16 per cent.

3.75 In the total expenditure on education, private donations and endowments accounted for nearly 25 per cent at the beginning of this century which came down to 11.6 per cent in 1950-51, and declined further to the level of 3 per cent by 1980-81. Before accepting the proposition that private resources should be mobilised on a larger scale for educational development, it will be necessary to examine the reasons for such a tremendous decline in private initiative and decide deliberately as to whether this trend can be reversed.

3.76 Education has, till now, been essentially the responsibility of States. They have been providing around 70 per cent of total plan expenditure for education. This means that availability of educational facilities has been dependent, not upon the commitment of the nation as a whole, but upon the vicissitudes of the resources allocated by States. Consequently, children in Bihar, Uttar Pradesh, Orissa, Madhya Pradesh, Assam and Rajasthan were at a great disadvantage in comparison to Punjab, Kerala, Tamil Nadu, Gujarat and Maharashtra. This would be evidenced by figures of per capita budget expenditure on education in 1982-83 which were as low as Rs. 40.5 in Uttar Pradesh, Rs. 49.4 in Madhya Pradesh and Rs. 51.2 in Bihar, while the corresponding figures were Rs. 119.5 in Kerala and Rs. 100 in Punjab with the all India average of Rs. 68.2.

3.77 In the light of the fundamental role assigned to education in national well being and development, it is necessary to decide as to how resources will be allocated for education and the extent to which Central Government would assume the responsibility to promote priority programmes and how possibly, the share of education might be augmented within the framework of competing demands in different States. It is essential that quantitative, qualitative and temporal objectives should be determined through an iterative process with reference to the availability of resources. Otherwise adoption of indisputably unimplementable targets results in disorientation, ad-hocism and lack of commitment.

CHAPTER IV

AN APPROACH TO EDUCATIONAL REORIENTATION

4.1 The compulsions which have necessitated the formulation of a New Education Policy have been discussed in earlier chapters at some length. Because of internal and external factors, a point has been reached when some of the time-worn concepts and patterns should be replaced by new thrusts and institutions which would provide strength, cohesion and dynamism to society and also prepare the manpower to enable the country to participate vigorously in the technological revolution sweeping the world, necessitating new methods of production, communication and organization.

4.2 An education system is an extremely complex framework in which diverse disciplines and a multiplicity of agencies participate through a variety of institutional arrangements. Educational processes are also characterised by a futuristic thrust. The education policy formulated in 1968 has influenced the shaping of a whole generation since then just as what is decided now will greatly influence the future. Therefore, the process of policy formulation for education in terms of objectives and instruments as well as the strategy of implementation calls for involvement at various levels of all those dealing with or interested in education. A national consensus can best be established through an open-ended discussion of various viewpoints and issues relevant to the restructuring of the system of education. Since educational policies have a long range impact on society, any new ideas and initiatives must pass the test of conceptual clarity, internal consistency, cost effectiveness, replicability and implementability.

4.3 In a major exercise like the evolution of a new policy for education, no single organization or group can identify all the issues or have all the answers. The ideas and issues presented in this paper

are, therefore, meant to provide the basis for a national debate. Many new issues and ideas are bound to be contributed by the participants in a debate, which may also expose the weaknesses of many of the notions holding the field today.

4.4. An exercise in policy formulation must start with pinpointing the goals of education and, having done so, proceed further with a critical appraisal of past experiences leading to the present situation and an assessment of the facilitating factors as well as the constraints which determine the environmental conditions for realistic decision making.

4.5 In the earlier chapters, an attempt has been made to describe the present status of education both quantitatively and qualitatively within the framework of development and equity. It would now be appropriate to attempt a statement of the goals of education and then discuss the opportunities for and constraints on the achievement of these goals.

Goal Orientation for Educational Planning

4.6 A recapitulation of the goals of education, emphasised by the Indian Constitution and enunciated, from time to time, by thinkers, planners, policy makers and educationists, indicates that this basic issue should be considered from three inter-related approaches.

4.7 First of all, it is necessary to define the role of the educational system in totality since it has an institutional character of its own which goes beyond its main function of imparting education to pupils. The system is expected to generate new knowledge in all fields within the reach of the human mind. In addition, it has to evolve principles, methodologies and guidelines for the application of knowledge for benefitting society. It is also expected to provide knowledge and skills for solving the problems of development. It must also enable the students to develop an understanding and a perspective

of the physical and social environment. Research and development and extension, therefore, have to be accepted as essential ingredients of the educational process.

4.8 Secondly, emphasis has to be laid on the socio-economic well-being, competence and creativity of the individual, which encompasses:

- (i) physical, intellectual and aesthetic development of personality;
- (ii) inculcation of a scientific temper and democratic, moral and spiritual values;
- (iii) development of self-confidence to innovate and face unfamiliar situations;
- (iv) creation of an awareness of the physical, social, technological, economic and cultural environment;
- (v) fostering a healthy attitude to dignity of labour and hard work;
- (vi) a commitment to principles of secularism and social justice;
- (vii) dedication to uphold the integrity, honour and foster the development of the country; and
- (viii) promotion of international understanding

4.9 In addition to developing the personal attributes listed above, education has to assume the responsibility for imparting knowledge about concepts and facts relating to different subjects and for developing skills in the area of languages and communication, as also interest in hobbies, games and sports.

4.10 Besides in relation to economic development and employment, education has to equip the pupils with competence, in terms of knowledge and skills, in various combinations at different levels of understanding, relating to the opportunities of employment in the context of a particular pattern and rate of development.

4.11 Education has to play an important role in integrating the individual into the social system. It is also meant to inculcate suitable habits for health care, mental application, management of time and conservation of physical, mental and emotional energy.

4.12 Thus perceived, education can be the most effective means for equalising opportunities and reducing disparities between human beings. In a democratic society, it is considered a fundamental right of citizens. In the ultimate analysis, therefore, the aim must be to enlarge the coverage and improve the quality of education in our institutions so that a person, belonging to any region, caste, creed, sex or economic strata, would have the chance of developing his or her potentials to the full.

4.13 It seems relevant to underline the fact that the goals of education listed above do not envisage the laying down of omnibus objectives for all levels of education on an a priori basis. Adult education would have different goals from those for school and university education. In different age groups relevant to elementary, secondary, vocational and higher education, the need as well as capacity for acquiring knowledge and skills varies considerably. Moreover, the process of learning itself is a hierarchical process and, therefore, envisages different levels of inputs and outputs. An other point which needs consideration is that many students do not pursue formal education beyond a certain stage. This necessitates that, for each stage of education, discrete objectives and competence would have to be spelt out and for achieving these, integrated and holistic packages of formal and non-formal learning will have to be developed.

Linkages Between Education and Society

4.14 While discussing educational objectives, it seems appropriate to state that just as the education system requires support, it is also a support for other spheres of development. Therefore, policies and plans for it must be finalised in consultation with those who employ the manpower produced by it and others whose success in various programmes launched by them is determined by the capabilities, attitudes and behavioural patterns of people whose personality is moulded by exposure to education.

4.15 No law and system can survive if even educated people do not have respect for life or a sense of right and wrong. Democracy and civic life will degenerate beyond recognition if people do not understand the importance of tolerance and respect for view points different from their own. How can a country grow if a spirit of adventure and the confidence to innovate and take risks has not been instilled in young people? How can priority programmes requiring mass acceptance and participation for their success, like protection of the environment, energy conservation and population control, make a real headway unless a programme for the improvement of ecological conditions makes the students aware, right from their formative years, of the close interdependence of their own welfare with the outcome of these programmes.

Factors Facilitating Educational Restructuring

4.16 There are many factors which are crucial to the restructuring of education through a new policy framework. The most important of these relates to motivation. The preponderant majority of people are convinced that the present system of education, despite many positive contributions in the past, needs radical transformation. There is widespread concern and a general consensus about the deterioration and irrelevance of the education system. It cannot be improved by marginal changes. The system has to be resurrected by fundamental

changes in priorities, contents, methodologies of teaching and learning systems of evaluation and management structures.

4.17 Since independence the nation has invested a large slice of its resources in education. It, therefore, has a right to expect the efficient functioning of educational institutions. Teachers have a special responsibility in every society and the way it is discharged sets the tone for the education of the young. Their commitment to give it their best in moulding the tender minds entrusted to them must be seen to be beyond question. Only then will it be possible for teachers to inspire students to take full advantage of the educational facilities and imbibe the values which would make them good citizens and good human beings. The perception today is that this is not happening.

4.18 The second factor which too is related to motivation, arises from the general concern for an overall transformation of the social, cultural and economic environment. There is a general feeling that much more needs to be done to curb fissiparous tendencies, establish an environment for tolerance and cooperation, promote the welfare of the poor and the disadvantaged and augment and modernize production. It is widely believed that education is one of the most effective instruments for achieving these objectives. Consequently, there is a reasonable hope that the country will be prepared to allocate the minimal resources necessary for enabling education to fulfil the above tasks.

4.19 It is also significant that the new policy is being formulated on the strength of considerable achievements in the last few years. India already has an extensive network of schools. Approximately 95 per cent of the population is within one kilometer of a primary school and 80 per cent is within three kilometers of a middle school. It has a sizeable manpower with the education and intellectual sophistication to support new initiatives. The educational system, through the initiative of individuals and voluntary groups, has generated many new ideas. These will contribute

significantly to assess as to what kind of initiatives would have a reasonable chance of success.

4.20 India is one of the few countries of the world which has its own satellites in space. It has a large network of television and radio stations and, at least in relation to broadcasting, there is considerable manpower capable of developing educational programmes. Even in respect of educational television, a number of centres have come up and some of them have already become operational. The availability of a satellite and a television network covering a majority of the population is potentially one of the most significant factors capable of contributing to the promise of new educational initiatives. This technology can, undoubtedly, revolutionise the teaching-learning system by enriching formal education and also by supporting non-formal education as well as the distance learning systems.

4.21 Actually, in recognition of the promise held out by new technologies, steps are already being taken to establish a National Open University, named after Smt. Indira Gandhi. This institution will make a qualitative difference to the process of developing manpower and putting new educational technologies to more effective use. It will be a boon for those who, for economic and other reasons, can not have access to formal higher education. Another significant initiative relates to the computer literacy programme (CLASS) under which nearly 2000 computers will have been distributed in schools between 1984-86 to demystify the computer and provide children with minimal skills for handling these. The enthusiasm generated by this will provide incentives for the expansion of the programme in the next few years.

4.22 In several other ways too, the new policy structure will be able to draw support from the initiatives already taken in the recent past. The exercises for restructuring do not involve breaking entirely new ground; they can and indeed have drawn upon the reports of the National Commissions (I & II) on Teachers and also of the UGC

Review Committee on the Working of Central Universities. Other committees have also been looking into the problems of vocationalisation, delinking of degrees and jobs, linkages between manpower and education, and several other problems.

4.23 The decision to set up pace setting Model Schools in the Central Sector in every district of the country reflects not only the extent of central commitment to education but also its concern for equity. Through these schools, the most meritorious children, particularly of rural areas, will be able to get quality education irrespective of the economic status of their parents. To a certain extent this project has drawn strength from the successful working of gigantic network of schools under the aegis of the Kendriya Vidyalaya Sangathan.

Constraints on Policy Making

4.24 One of the criticisms levelled against all new policy initiatives stems from the perception that while a lot of attention is given to policy making, the thrust for implementation leaves much to be desired. To a great extent this criticism is not warranted. The failure really lies in the fact that, at the time of policy formulation neither the internal and external constraints of the system are taken into account, nor the pre-requisite for implementation in terms of resources, changes in the institutional and management system, infrastructure and horizontal and vertical linkages spelt out explicitly. To ensure that discussions for evolving a New Education Policy will take place in an atmosphere of realism, it is proposed to discuss some of the constraints in the following paragraphs.

Internal Constraints

4.25 Education, like all other systems, has a set of beneficiaries who would lose many of their special and unjustified privileges if the education system is changed and its functioning is

revamped to secure greater efficiency, equity and objectivity. Should there be a change in the examination system, a lot of people will resent it because the system of private tuitions and coaching shops might become unnecessary and those who benefit from leakage of papers, preparation of keys and test papers etc., mass copying and other unethical practices will be put to a loss. On the other hand, this will mean much more correction of answer books, regular class work and innovative teaching involving considerable preparation.

4.26 If rote learning of text books is replaced by innovative work and environment related teaching, many teachers will find themselves in difficulties because they will have to adjust to new curricula for which they have not been prepared either by their original training for the job or by experience. In a predominantly illiterate society, unfamiliar with and unconvinced about the value of education there is no social demand on a teacher for a high level of performance. The situation gets further compounded when the total system of management, supervision and evaluation of teachers is so large and so impersonal that the teachers acquire almost total immunity from accountability. If the community were to be given the authority to monitor and evaluate their work, they will have to be much more regular and dutiful and quite possibly they will have to stay in the vicinity of the school rather than in far away townships from which they commute back and forth at their will.

4.27 De-politicisation is a popular idea. Should it come to pass, many political parties will lose their cadres, not knowing where to turn for their manpower required for contesting elections and participating in demonstrations, protest marches and processions. Many belonging to academic and non-academic staff will find themselves struggling with their appointed tasks to get ahead in their career instead of securing the promotions through agitational politics. Faithful enforcement of the principles underlying merit promotion scheme is bound to mar the careers of people with doubtful credentials as researchers and teachers.

4.28 If the degrees were to be delinked from jobs, there will be strong protests from the managements of institutions because, in the long run, they will lose some of their clientele, who will prefer to join those institutions or courses which give them training better aligned to the national tests or examinations conducted by employing organizations which will assess capabilities uninfluenced by degrees.

4.29 In a decentralised system of management, the educational bureaucracy will lose some of its privileges and prestige which emanates, not from the quality of support and guidance provided by them in the functioning of the educational institutions but from their power to dispense patronage in the matter of recruitment, promotions, postings and transfers and centralised purchase of equipment and consumables.

4.30 Vocationalisation has not made much headway partly because of the cultural prejudice towards skill-oriented education. Insistence on some children going to vocational stream may create resentment among the parents even if the children are to enter that stream on the basis of their aptitudes. Moreover, due to inadequacies of manpower planning system, it has not been possible to relate employment opportunities with the content of vocational programmes or to mould the latter to needs of trained manpower. These inadequacies have been compounded by the inability of the Central and State Governments to secure adequate funds to equip schools, create teaching positions and organise suitable training for them. Finally, lack of facilities for improving qualifications necessary for vertical mobility has bedevilled implementation of this scheme.

4.31 Even research institutions concerned with the content and pedagogy of education might oppose major changes in educational policy because this might necessitate a modification of their own systems and structures which reflect the present priorities and approaches to curricula development, preparation of textual materials and the teaching-learning methodologies.

4.32 The administrative system in the States and the Centre will also find it difficult to accept the implications of the new policy of education if it leads to the conclusion that educational processes require not only better and more diversified but also significantly different inputs for training of teachers. Inevitably, this will add to expenses since better quality of manpower will cost much more and will require radical reorientation of teachers' training programmes involving new curricula, new pedagogical techniques and frequent reorientation and renewal through summer courses and short duration workshops and seminars.

Technological Constraints

4.33 Availability of new communication technologies has earlier been identified as a facilitating factor for a new initiative in the field of education. Application of new technologies can convert educational institutions into "learning" rather than "teaching" institutions, with vast implications for curricular and instructional methods. It is necessary to warn against a euphoric reaction on this account. A realistic assessment of the "preparatory work" involved in realising the potential of these technologies leads one to the conclusion that, in the short run, the gains from these will be quite marginal. It is relatively easy to acquire the hardware, but the development of software to deliver relevant knowledge and inculcation of appropriate attitudes requires a thorough understanding of the strengths and weaknesses of various media and also, an insight into the nature of the communication process, adequate experience of production and extensive field studies to observe and document the linguistic skills and other characteristics of the audience in and out of schools. The process of distance education through different media constitutes a discrete system of pedagogy. Before this pedagogy yields significant returns, diversified programmes of training of varying durations will have to be organised.

4.34 While discussing the promise and limitations of educational technologies, the role of television deserves special mention. This medium has opened new vistas not only for the enrichment of formal education but also for imparting non-formal education. It would, however, be a mistake to assume that it can be pressed into service, at short notice, on a large scale without making considerable investments for establishing relay stations to operationalise new channels of communication. As far as the existing channels are concerned, unless the present policies are modified, competing demands on the time will preclude its extensive use for educational purposes.

4.35 The role and impact of television and also of movies, requires careful attention from another viewpoint. It has been argued in many forums that many of the themes disseminated through these media run counter to the thrust of education. A large number of parents and teachers have complained that the manner in which violence and brutality, glamourising of crime and gross display of wealth are being presented on the cinema and television screens has an adverse effect on the minds of the young people. Even the large hoardings advertising the films are a cause of constant offence to people's sensitivity. In the absence of purposeful action, the orientation of these powerful media will be a constraint on the educational initiatives and thrusts for the internalisation of values appropriate for a tolerant and civilised society.

4.36 Finally, it must be mentioned that irrespective of the content, quality and arrangements for dissemination, the impact of educational programmes will depend essentially upon the availability of radios, television sets, tape recorders, video cassette players etc. All these are quite expensive and what is more, require reliable management for repair and maintenance. If, adequate funds cannot be provided for their supply to schools, and for their upkeep and use, it would not be possible to realise the potential of the new technologies.

Economic Constraints

4.37 It is essentially important to consider economic and financial constraints on education. Economic constraints arise from the nature of production relations, rural-urban disparities and a skewed distribution of income. It has been seen that the enrolment and retention of students, particularly at the elementary and secondary levels, are greatly affected by poverty which necessitates young people to take to activities for augmenting economic contribution to their families. In relation to equity and quality of education, economic constraints play an even more important part. Those children who have to look after their siblings or participate in economic activities within or outside the family, cannot devote as much time to studies as others who are better placed in life. It is also significant that while well-to-do families can afford to send their children to institutions with good facilities for their physical, intellectual and socio-cultural development others have no choice but to send their children to schools which have broken-down buildings and only one teacher to teach five classes. Because of disparities in income and the large number of people living below the poverty line, it is unrealistic to expect the community to effect much improvement in the quality of schools. Analysis of the rate of growth of enrolment and retention indicates that non-participation in education is directly related to illiteracy and poverty. The growth curve of enrolment has flattened out in recent years mainly because the non-participants belong to the hard core of the poor and the illiterate. Their limited capacity to contribute money and material has to be recognised.

4.38 Alleviation of poverty requires changes in the technologies and modes of production in the rural and the unorganised sector. The research, extension and training institutions should pay special attention to the generation of relevant knowledge through systematic research & development efforts for this purpose. The present orientation of most of these institutions, however, is towards the corporate sector of the industry, though even in this direction,

significant results have not been forthcoming. The dynamics of the economic structure and the inclination to take up problems which would offer greater rewards in terms of recognition from an international audience is a serious constraint on the reorientation of research so that it would lend significantly greater support to solve the problems of productivity, qualitative improvement and functional efficiency of agriculture and other activities related to rural development.

4.39 It would be appreciated that one of the pre-requisites for modernisation for survival is the establishment of institutions of excellence at the level of school as well as higher education. For this, it will be necessary to identify young people of merit, give them the best possible education, train them in frontier areas of knowledge and having done this, put them in an appropriate work environment so that they can come up with ideas which will keep India at par with other countries.

4.40 Impact of technological modernisation and economic globalisation can also be seen on the habitat pattern, which, in turn, affects the spatial spread of school facilities. The process of urbanisation gets greatly hastened and when that happens, the viability of schools and colleges also gets seriously affected.

4.41 Since the detailed scenario of the processes of development in the coming decades is still to be spelt out, it is difficult to see its full implications with reference to educational planning. The resultant lack of clarity will be one of the more important constraints on educational planning. This will necessitate building in an element of flexibility into the policy framework so that the unanticipated challenges can be met and measures to establish an increasingly greater complementarity between development needs and education can be taken, as and when necessary.

Legal Constraints

4.42 Even though education is now a concurrent subject in the Constitution, the implications of this provision are still to be considered and incorporated into the legal and structural framework of the educational system. There is, however, no denying that the amendment for concurrency has increased the responsibility of the Central Government not only to intervene to prevent events or activities conflicting with the objectives of educational development but also to plan for and accept the overall responsibility for the rate of growth, coverage and quality of education throughout the country.

4.43 There is a growing opinion in the country that even after education became a concurrent subject the Central Government has not taken any steps to effectively influence the national system of education. It has to be considered as to how it should prepare itself to work together with the states for increasing the efficiency of educational process, enforcing faithful adherence to schedules for teaching and examinations, providing minimum facilities in schools, providing the required reorientation in teachers' training programmes, preventing the preparation and use of textual materials prejudicial to social cohesion and national integration; enforcing certain minimal and mutually comparable standards on educational institutions and depoliticising the educational system.

4.44 In respect of the teaching of languages too, Central Government is unable to ensure the faithful implementation of the three-language formula. It is necessary to ensure that language does not become a barrier to mobility in India of tomorrow.

4.45 There is considerable uncertainty about whether or not it is necessary for an educational institution to obtain any permission or registration from either the State or the Central Government. So far as private schools are concerned, the situation is characterised by lack of any provisions to control the cost, quality, or orientation of

education. Even stipulations regarding the safety of children can not be enforced. While most of the children go to schools established, supported or recognised by Government, there is an increasing incidence of establishment of the so-called "English medium schools" which attract guillible parents mainly because the municipal or government schools are so unattractive. Whether this situation should remain or it should be modified, has to be decided after careful deliberations. There is an obvious case for encouraging innovation and for the establishment of quality institutions through private initiative.

4.46 It would be apparent that the determination of the objectives of Education is linked integrally with the constraints of the present framework of State and Central legislation. At this stage, this problem, especially with reference to lacunae, is posed in an open ended manner for general consideration. There are some who suggest a legal framework for establishing a uniform national core curriculum throughout the country. Fortunately, however, there has been intensive interaction among the educational experts of different States and the Centre in the recent past which may obviate the necessity of legislation.

4.47 In respect of the structure of universities, which are based upon laws framed by States or the Central Government, many questions are being asked from the viewpoints of the style and efficiency of management. It is felt that the management system of the universities has become quite out of tune with the size of these organisations and the defacto relationship between different authorities. Whether the Central Government should assume some powers in this regard for introducing appropriate provisions for the depoliticisation and modernization of the management system of universities, is a much debated issue. A decision on this will have to be evolved through consultations.

4.48 The confusion with regard to processes of certification has already been referred to earlier. It is seen that while in the fields of Medicine, Law and Architecture, there are legal provisions to regulate registration for the purposes of professional practices, similar provisions have not been made in respect of other professional courses like Engineering, Management or Education.

Financial Constraints

4.49 It is hardly necessary to establish the relevance of financial constraints in the context of educational planning. Whether one looks at the question of equity or coverage or quality or diversification, the provision of sizeable financial resources appears inescapable. There is no point in discussing universalisation of elementary education (UEE), vocationalisation of education, removal of illiteracy, qualitative improvement of school and higher, particularly technical education, or of establishment of institutions of excellence unless a system is evolved for allocation of funds on the basis of an objective determination of norms of per unit cost in various streams.

4.50 In addition to facing these issues, it appears necessary that adequate thought should be given to the scope of raising funds for education; by levy of appropriate cess on consumption or imports ; earmarking of resources for manpower development in all large projects; and mobilization of private resources. It will also have to be decided as to what should be the proportion between Central and State funding and what steps should be taken for the enforcement of earmarking conditions for various educational programmes. As the major reason for those who are opting out of education at the school level is poverty, it would be unrealistic to expect them to contribute significantly to resources for education. Secondly, now that education is a concurrent subject, the Central share for education will have to be enhanced; otherwise, it will not be possible to establish any correlation between responsibility and performance. Thirdly, except for school and vocational levels, the pricing of

education at other levels will have to be reconsidered and quantum and nature of subsidisation will have to be related either to merit or the dictates of social justice.

Constraints of the Total System

4.51 The most crucial of all constraints arises from the orientation of the total societal system of which education is no more than a sub-system which is not only conditioned by the culture of the total environment but also inevitably, displays its salient characteristics in its own functioning. It will, perhaps, be accepted that, in the Indian system, decision making, administration and implementation and more particularly, the management of change are characterised generally by lack of entrepreneurship and excessive emphasis on hierarchical status. These are compounded further by the rigidity of approach, insularity of departmental structures as well as lack of detailed planning, unwillingness to experiment, suspicion of science and new ideas and ritualistic adherence to the procedural rules and regulations. The intellectual sophistication nurtured through centuries of philosophical debate is widely misused by the bureaucracy and the intellectual establishment to frustrate change-oriented decisions, without appearing to do so, by circumscribing new initiative with so many preconditions and qualifying clauses that the whole momentum of a new programme is lost in the hurdle race implementation.

4.52 Perhaps the seemingly sweeping statements in the preceding paragraphs should be illustrated with concrete examples.

4.53 A decision has been taken to expand the system of educational television at a very fast pace. Apparently, everybody wants this initiative to succeed. There is also a general recognition that the manpower required for handling hardware or developing software is in very short supply. Yet, while prescribing the process for recruiting manpower, without any consideration of market forces of demand and supply, pay-scales, qualifications and procedures for

recruitment are sought to be laid down on the pattern prescribed for the induction of mechanical or civil engineers, who are available in large numbers.

4.54 Despite the high rate of obsolescence of computers, the policy for promoting the use of computers was circumscribed by procedural requirements to such an extent that there have been cases in which it took several years to obtain clearances.

4.55 Everybody wants the introduction of techniques of modern management in the working of development departments but it is almost impossible to create jobs with emoluments and perks comparable to what MBAs from good institutions command in the market. A dutiful controller of finance prescribes as to how the possibility of any leakage of funds must be eliminated but even for mammoth projects crucial for the economy, no one calculates even the direct financial cost of delay.

4.56 Two other features of the contemporary system also need to be mentioned. The first relates to the unwillingness of government, institutions, or individuals, to delegate their powers and functions. It has been clear for quite sometime that proper functioning of elementary or secondary schools cannot be ensured without creating a planning, training, monitoring and resource centre for education at the district level and at the same time, involving the local communities in the management of schools, not nominally but effectively. Perhaps, it would not be so difficult to set up the district centres because it will mean creating new posts and setting up of new offices. However, providing these centres with decision making powers, even within a limited framework, to the exclusion of higher authorities, will be extremely difficult.

4.57 Secondly, the compartmental character of the system poses a major problem. It has been proposed many times and what is more, it has also been accepted repeatedly that several developmental activities have such crucial horizontal linkages with other sectors

that these interfaces should be planned, funded, implemented and monitored in an integrated fashion. In spite of this, it has not been possible to make much progress for the establishment of desired complementarities.

4.58 Even within the education sector, problems are created by departmental jealousies. It is recognized that the types of courses offered in Arts, Humanities and even Science, particularly at the undergraduate level, are unsuitable for adequately increasing either the functional efficiency or employability of students. Yet, the desired composite courses have not been introduced because of the insularity of academics belonging to different disciplines.

4.59 A detailed analysis of the constraints of educational planning has been attempted essentially to underline that if the initiative for reorientation remains confined only to educational planners and administrators and the total system remains unconcerned and unchanged, the chances of success of the new policy initiative will be greatly compromised.

Perspective of Policy Formulation

4.60 Having described the goals of education and discussed some of the factors which would facilitate or impede the initiative for radical restructuring of education, it appears necessary to proceed with the description of a broad perspective with reference to which the new policy framework will have to be evolved. There are serious difficulties in presenting a comprehensive and detailed projection of the future scenario, not merely because of inadequacies of data pertaining to education but also because of lack of clarity about the overall scenario of the efficacy of health and family welfare programmes, volume and composition of GNP changes expected in the employment market because of modifications in policies with reference to the choice of technologies and the impact of modernisation on the process of urbanisation and participation of women. However, for the present paper, it would be adequate to present a broad picture since

it would yield the insights relevant to policy planning and also pinpoint the issues on which a view has to be taken through interaction and discussion.

4.61 The age-specific population in age-group 6-14 in the year 1981 is calculated to be approximately 15 crores. In 1981, 9.3 crores pupils were enrolled in elementary education, 0.95 crore in secondary and 0.31 crore in higher education. Assuming that the growth rate of age-specific population in years 6-14 age-group in the 'eighties can be contained around 1.5 per cent per annum, it is estimated that by 1990-91, the population in this age-group would be 17.4 crores. If the past pattern of educational development continues, particularly in terms of the growth of enrolment and its retention rate, 11.2 crores children will be enrolled in the elementary education under formal system, while another 1.15 and 0.38 crores will be in secondary and higher education levels respectively.

4.62 However, it is expected that in the 'nineties the growth of age-specific population in years 6-14 age-group will further slow down. On the assumption of 1 per cent per annum growth the age-specific population in 2000 AD, is estimated to be 19.25 crores. Assuming that the universal elementary education is achieved by 1990, out of the total age-specific population of 17.4 crores, 11 crore pupils should be in primary stage and the remaining 6.4 crores in the middle stage. It may be noted that this achievement implies that the primary education will be 1.5 times and the middle 3.2 times of its present size. Such an expansion will have a significant impact on the educational expenditure as well. It is estimated that in terms of 1980-81 prices, and assuming the per unit costs of 1977-78 to stay put, the budgetary requirements for the year 1990-91 will be doubled to Rs. 3200 crores (the 1980-81 expenditure being Rs. 1537 crores). On the basis of 8 per cent per annum rate of inflation the budget in current prices would be more than four times the 1980-81 allocations. In 1981 the number of teachers engaged in elementary education was 21.7 lakhs. At the existing pattern of educational development, their number will be 29 lakhs by 1990. However, if universalisation of

elementary education is achieved by 1990, the total requirement of teachers for elementary education would increase to nearly 44 lakhs.

4.63 In addition, the universalisation of elementary education by 1990, will also imply that even at the existing transition rates, the enrolment in the secondary and higher education level will increase to nearly twice of their 1980-81 enrolments. However, keeping in view the fact that the per unit cost of secondary and higher education are several times higher than the per unit cost of elementary education, the overall impact on the educational budget would be tremendous. It may be recalled that these implications have been worked out without taking into account the expenditure which would have inevitably to be incurred on improving the quality of education.

4.64 The upshot of the above scenario is that any substantial improvement in educational coverage as well as retention, which constitutes the core of universalisation of elementary education efforts, will not only require significant increase in educational expenditure on elementary education but will also have a multiplier effect on the total educational budget through increased enrolments in the secondary and higher education. Hence, policy deliberations vis-a-vis universalisation of elementary education need to be matched with hard financial decisions.

4.65 Alternatively, other educational approaches, such as non-formal/distance education, and vocationalization have to be worked out in detail for a large scale implementation, and replication.

4.66 The above scenario underlines the immensity of the quantitative tasks of education on the basis of conservative assumptions. This re-emphasises the importance of taking up programmes for population control on a massive scale through adult education as well as school and college education so that small family norm becomes deeply embedded in the consciousness of the community. Otherwise, a situation might arise in which, due to sheer weight of numbers, the system might cross the bounds of financial

feasibility at even the present levels of participation and attainment.

4.67 To the extent the analysis in Chapter III is valid, it is apparent that the objectives of education cannot be attained unless qualitative changes are introduced in the system. To a great extent these would be in the nature of behavioural, conceptual, methodological and organizational modifications. It has, however, to be recognised that these will not bear any fruit unless educational institutions attain a minimum threshold of essential facilities in terms of: buildings; black-boards; charts and posters; drinking water and bathroom facilities; laboratories; science kits and libraries; and minimum contingencies for organising Socially Useful Productive Work, nature studies, games and sports and cultural activities.

Approaches to Resource Mobilisation for Education

4.68 Providing these facilities will involve additional expenses. At least for schools and for institutions of excellence, the expenditure will have to be met fully between the state and central governments. In the case of other institutions and the general run of students, excepting, of course, the disadvantaged section who have to be brought at par with others, the possibility of rationalising the fee structure may have to be considered. This will, apart from augmenting internal resources, also change the perception about the value of education.

4.69 Other suggestions received in this connection are: requiring development sectors to allocate a percentage of their budgets for education; including manpower development as an item in the cost structure of public sector projects; realisation of at least a part of the real cost of education in professional institutions from those employing their products; levy of cess on imports; encouraging private entrepreneurs to contribute to educational development, particularly in respect of vocational and professional streams, by giving suitable rebates in taxes; and setting up of training institutions in

collaboration with public and private enterprises, a surcharge on land revenue and on municipal house-tax.

4.70 The problem of resources for education has already reached the proportions of a crisis for the central as well as the state government. Over the years, despite the recognition of its crucial role in human resource development, education has been treated as a residual sector to be taken care of, largely by the states, out of the resources accruing to them through the Finance Commission awards and Central Assistance for plan expenditure under the modified Gadgil formula. Now, however, education is being encouraged to assume its assigned role in the process of development, a new strategy for raising and sharing resources has, therefore, to be devised. If investing in education is costly, not doing is costlier. A possible approach to this could be the setting up of a high powered joint commission of the centre and states for studying the problem of resources for education and working out a strategy for mobilising these on a long-term basis.

Elements of a Strategy for Educational Planning

4.71 Any strategy for educational planning will have to deal with problems of (a) access; (b) equity and minimum threshold; (c) social relevance, diversification and quality; and (d) methodology and management.

Universalisation of Elementary Education

4.72 As for the issues of access, equity and minimum threshold, availability of good quality elementary education to all children irrespective of their caste, sex, creed, economic status and region is a commitment enshrined in the Constitution. As discussed at length earlier, this commitment, which was to be fulfilled by 1960, is still to be realised. A section of educational planners have, however, been arguing that this will stand fulfilled as soon as the enrolment reaches a particular participation ratio. This view is difficult to

accept. Education is not a ritual. It cannot be taken as having been delivered till a child has reached the level of attainment envisaged as a norm for a 14 year old boy or girl. With drop-out rates ranging around 77%, enrolment, by itself, loses its meaning, except as a frame of reference.

4.73 It has been explained already that this state of affairs is attributable largely to general apathy towards education, poverty, irrelevance of educational content, lack of women teachers and allocation of inadequate resources. There has been uneven development of education not only between states but also between the scheduled castes and scheduled tribes and girls on the one hand, and the generality of children in rural and urban areas, on the other. Measures such as mid-day meals, free supply of uniforms and books, and even central assistance to the nine educationally backward states for the appointment of women teachers in single teacher schools, have not yielded significant results as yet. Consequently, new approaches such as the setting up of part-time schools and non-formal education centres have been proposed to provide flexibility in the school routine for accommodating boys involved in income generating activities or family occupations and girls preoccupied with domestic chores, especially the care of siblings. Other suggestions received for consideration include payment of opportunity-cost compensation to parents who forego the support of children while they are at school and greater involvement of the community for the maintenance of physical facilities, effective management of schools, and exercise of evaluative control on the teachers. Another suggestion favours augmentation of the association of women with children's education in the formal as well as non-formal streams through relaxation of qualifications and age-bar, training and appointment of women from the same village on contract basis and enhancement of the visibility of school by making it a centre of community participation. It has also been proposed that the educated employed in rural areas should be trained and assisted to become educational entrepreneurs to help the students, in return for payment on unit basis, to attain, through

intensive coaching, educational levels certified by external examinations to be equivalent to class V or class VIII.

An Alternative Model for Elementary Education

4.74 Some studies have shown that the children who are involved in pre-primary education through Angan-Wadis under the Integrated Child Development Scheme tend to participate in education to a much greater extent at later stages. Based upon this experience and also keeping in view the compulsion of girls to look after their domestic chores, a wholly different approach to elementary education has also been suggested.

4.75 It has been argued that, under Indian conditions, no single approach is likely to make much headway in the near future in imparting education beyond the age of 11, particularly among the poor, in the rural areas. A holistic model has, therefore, been proposed in which, with the help of Angan-Wadis under the Integrated Child Development Scheme programme, pre-primary education would be provided for three years and thereafter, in continuation and conjunction, at the same location, primary education would be organised. This would be evaluated by a public examination on the basis of which admissions would be made for further continuation of education from class VI to X. In this model, girls would be able to come to the school with siblings, who would be taken care of in Angan-Wadis, while they would be studying in higher classes, and non-formal education would be taken up for classes VI to X, to the extent necessary, through the enlargement of the Open School system. This model also envisages that children should enter the vocational stream at a stage earlier than the 10+ level; otherwise they are unlikely to take to vocationalisation with any real interest.

4.76 As far as access and equity at the secondary level is concerned, scheduled castes, scheduled tribes and girls present a major challenge. There is a general disinclination amongst all communities to send girls to far away schools, particularly if these

have a co-educational system. Resource constraints, however, do not permit either the opening of separate schools for boys and girls or the setting up of a much larger number of schools, to bring them closer to village habitations. What alternatives could be devised by way of vocational training in place of the formal education under the 10+2 model so that skills relevant to the rural environment and employment opportunities could be imparted, needs careful consideration. Not many ideas have emerged in this regard thus far. Some of the suggestions received relate to the desirability of linking post-elementary training with TRYSEM and Community Polytechnics, establishment of a peripatetic system of education supported by distance learning and publication and free distribution of specially designed books for continuing education.

Adult Education

4.77 It seems essential to juxtapose the scenario of the education system against the internal dynamics of a society in which 64% of the population is illiterate and large percentage of students are first generation learners. In countries in which a large body of population is educated, the people function effectively as tribunals to influence the working of educational institutions. In India, the disparity in educational status of the population and of those involved in the management of the day-to-day functioning of educational institutions is very striking. It is, therefore, necessary, even for the proper functioning of the system of education that the permeation of education should be given attention. It is also a truism that the nation would not move towards the twenty-first century on two legs unless illiteracy is banished and a universal learning environment is created.

4.78 Unfortunately, the impact of Adult Education programmes has, thus far, been far from impressive. This may be because, by and large, these have concentrated on a narrow objective of literacy, making only token concessions to the idea of delivering relevant knowledge to the target population, for improving their economic

performance as well as their quality of life. Moreover, Adult Education cannot be pursued with any vigour without the participation of the masses in initiatives for social, economic or political change. Since the rationale and the dynamism of Adult Education programme comes from the perceived imperative that it is a pre-requisite for development and survival, it seems necessary to consider how the national goals can be advanced through it.

4.79 Many development analysts have underlined that the programmes of rural development being promoted for removing poverty and increasing productivity require widespread acquisition of relevant information for creating motivation, behavioural changes and exercise of choices necessary for the success of development efforts. There is adequate evidence that adult education can and has to be used as an instrument for the bulk of the population which may have never been to school in order to educate them about the programmes of family welfare, hygiene, immunisation and child-care. On the other hand, the correlation between illiteracy and high infant mortality, high rate of growth of population, female infanticide and poverty has also been established. From the point of view of political participation, which is the bed-rock of democracy, adult education has been seen to play a vital role.

4.80 The real problem is as to who can be the catalysts for Adult Education. Apparently, even the bureaucracy concerned with development departments has a definite role in this regard but whether the required dynamism in Adult Education can be sustained only by them needs careful consideration. Voluntary organisations seem to have an important role in this movement, but how this role can be realised is still a moot question. Similarly, it has to be determined as to what responsibility should be placed upon the employers, particularly in the organised sector, for promoting education and literacy amongst their employees. There is an overwhelming evidence to show that wherever such initiatives have been taken, industrial relations have improved and productivity has also been augmented. The benefits that will accrue to the illiterate population on the one hand and to the

participants from amongst the students and teachers on the other have also to be assessed. It seems self-evident that there is no better way of integrating educational institutions with society than by organising their participation in this programme.

Voluntary Agencies

4.81 Our country's history of modern education is full of contributions made by social service societies and voluntary agencies. Great political and religious leaders as well as seers and sages, transformed their vision of the country's future by establishing educational institutions and by training young minds to shoulder responsibilities of mass education, social reform and cultural advancement. Although a large number of men and women continue to work through voluntary agencies, there is an enormous scope to increase their involvement. Wherever possible, effort should be made to entrust responsibility for formal or non-formal education, of young people as well as of adults, to suitable voluntary agencies. We should particularly look at them for organisation of innovative and pace-setter programmes.

4.82 In recent years some state governments have expressed reservations regarding involvement of voluntary agencies, and conversely the latter have also been critical of the Government's attitude towards them. It should be possible to work out a satisfactory arrangement for involvement of all individuals and agencies for the furtherance of educational goals.

Access to Higher Education

4.83 In the case of higher education, particularly at the undergraduate level, the problem is not of access and equity but of preventing waste of scarce resources in producing a large number of unemployables. Diversification of courses has been undertaken with a view to establishing greater relevance to personal development, socio-economic problems and the world of work. These will be discussed

separately. Effective steps should be taken to see that only those with scholastic interest or aptitude enter higher education. Scholastic aptitude tests on the lines suggested above have been in vogue in many countries for decades; there is no reason why these cannot be administered in India.

4.84 It needs to be emphasised that if degrees are delinked from jobs, there will be considerable relief from the pressure of numbers in the undergraduate stream in case avenues for training with a reasonable assurance of getting jobs, are provided on a large scale, in close collaboration with employers. In any case, with the advent of the distance learning system, vertical and horizontal mobility can be assured to the motivated even after they take up employment.

4.85 To the scheduled caste and scheduled tribe candidates, access has been provided through reservation of seats. This, however, is not enough. In the real sense, access to education has meaning only if those who enter an institution are able to continue at the same pace as others; otherwise undesirable tensions and psychological barriers are created which vitiate their absorption in the mainstream of education. To obviate such situations, arrangements have to be made to provide special coaching before, and after admission to under-graduate courses.

4.86 At the post-graduate level in the formal stream, the need for encouraging only those students who have a good academic record assumes great urgency. At this stage also admissions can be regulated through specially designed tests. Unless these, or some other pre-entrance tests are prescribed, a large number will go on joining post-graduate courses merely because they have time on their hand and nowhere else to go.

Innovation in N.E.H.U.

4.87 It would be relevant to describe the mechanism developed and introduced in the North Eastern Hill University. Here, students

admitted in under-graduate programmes after the 12+ stage are offered an integrated two year pass course with the understanding that they would be able to get an honours degree with another year of special study in any of the subjects in which they secure not less than 45% marks in the pass course examination. Those who fail to come to this level have two chances to improve their rating in any one of the subjects. This, system, it has been indicated, has many merits. Firstly, it allows a student to make a choice of his area of specialisation at the 14+ stage when he is more mature and more aware of his potentials and limitations. Secondly, this system ensures that the subsidiary subjects to which, as a rule, honours students pay scant attention, will not be neglected. Thirdly, it ensures automatic weeding out of students with limited scholastic ability; and fourthly, it brings the performance of affiliating colleges into sharper focus and thus provides, to the management as well as the teachers, considerable motivation for improvement of standards.

4.88 Two other streams in respect of which careful screening and also special access to the scheduled castes and scheduled tribes has to be provided for relate to Technical and Management Education. It has been proposed in relation to Technical and Management Education that, to improve access to people coming from the normal run of schools, provision should be made for lateral entry to aspirants who have acquired practical experience after a lower order of technical training. In so far as the scheduled caste and scheduled tribe students are concerned, pre-induction and post-induction training is not enough. Their problems are often rooted much deeper in their childhood environment, their social inhibitions and their general lack of self-confidence vis-a-vis the others. These disabilities need attention at the 6+, or 8+ stage when the more meritorious among them should be handpicked and trained carefully to get over their personality problems and other handicaps.

Emergence of Capitation Colleges

4.89 Recent developments in several states have riveted attention upon the question of equity from another angle. A large number of technical colleges have come up which charge sizeable capitation fee for admissions. There is a strong feeling that their activities should be curbed because they are providing access to education on the basis of the economic status of the guardians and not on the basis of merit. On the other hand, it is also argued by the managements of these colleges that they are serving the social objective of widening the base of technical education by making the well-to-do pay the full cost of education. Another section has been recommending that these institutions may be allowed to continue provided they would place 25 to 50% of the seats at the disposal of government for admission on merit without payment of capitation fee.

Teacher Training

4.90 In the case of teachers' training, the problem is not of equity or access but of relatively low standard of candidates. Considering the role assigned to education and the crucial position of teachers in it, it is necessary that recruitment to teachers' training institutions should be regulated through stringent aptitude and attainment tests, giving special consideration to science students, sportsmen and people with manual dexterity and wider interests.

4.91 There is general acceptance regarding the need for reform of pre-service teacher training arrangements and also an increasing realization regarding in-service training or continuing education of the teaching community. The teacher today faces many challenges, emanating from expanding horizons of knowledge as well as other forces impinging upon the consciousness of the pupils. Parental attitudes and their values, social interactions, play-mates, etc., have at all times influenced the students. Radio, T.V. and films now-a-days distort the process of education and make the task of the teacher that much more difficult. While this requires a fresh evaluation of

the orientation of the media, it also calls for effective and recurrent programmes of in-service teacher education.

Inbreeding and Parochialism

4.92 The discussion in the foregoing paragraphs has examined the issue of access and equity with reference to different streams of education. It seems necessary to look at other factors which inhibit access and thereby violate the norms of equity. Many people are seriously concerned with the barriers to horizontal mobility, from one institution to another, created by reservation of seats for sons of the soil, informal preference for students of the same university and other subterfuges for in-breeding. It has been suggested that the University Grants Commission should be empowered and asked to look deeply into this problem to save the universities and colleges from the insularity and politicisation which inevitably follows from inbreeding and parochialism.

4.93 Another complex factor related intimately to access and, therefore, to equity emerges from the barriers to communication and mobility occasioned by the language policies followed by different educational establishments. A large system of Kendriya Vidyalaya Sangathan has had to be established essentially because there is no other network of instruction, common syllabus and comparable standards. The position is complicated further by the fact that the teaching of languages of other states is being neglected by most of the states. Notwithstanding the sensitivity of the issue, it is necessary that this matter should be discussed and debated.

Social Relevance, Diversification and Quality

4.94 A great deal has already been said about the gap between education and educational institutions on the one hand, and society on the other. Taking educational institutions as entities by themselves, it is observed that these are generally oblivious of and

unconcerned with the problems, potentials and characteristics of their environment. This has resulted in lack of, orientation and dysfunctionality of research and educational content, lack of support from the environment and the isolation of the teachers and students from the realities of life and the world of work. On the other hand, the community around these institutions is also a great loser since it is denied the opportunity of enriching itself and finding solutions to its problems through the intervention and support of a technically knowledgeable and mentally and physically agile group of people.

4.95 Lack of social relevance has serious consequences for the students emerging from educational institutions. They are unable to acquire insights and skills relevant either to socio-cultural processes, or to the world of employment and work.

4.96 Socially Useful Productive Programmes, National Service Scheme (N.S.S.) and other similar initiatives have not yielded the desired results largely because the character of examinations determines the curricular content and methodologies of education and also circumscribes the attitude of students. Over the years the examinations have become memory-based, highly routinised and unconcerned with the evaluation of the total personality, attitudes and values, and unable to the mental ability and physical dexterity of students.

4.97 From the view point of social relevance, it is necessary that the curricula should be so devised that these would help the students to take legitimate pride in the national heritage and feel committed to uphold India's unity and integrity and motivate them to understand and contribute participatively to the immediate community and environment and concretise the process of learning by relating theory with real life situations.

4.98 Lack of relevance of educational content to life situations is one of the reasons for the majority of the people, including some of the intellectuals, having apathetic attitude to education. This is why the educational processes are not getting much support from opinion leaders, planners, farmers, industrialists and, what is worse, even from the intended beneficiaries.

4.99 Initially, upto the early 'sixties, great expectations that people had from education found expression in their active contribution in the form of physical, material and financial resources to construct and equip school buildings and social education centres etc. They willingly sent their children for enrolment and also joined classes for adult education and literacy with great enthusiasm. While individually, many teachers responded positively to such a favourable and exciting environment, the system as a whole failed to re-evaluate and re-orient either its objectives or its methods of functioning. It moved away from direct contact and involvement with society and opted for wholesale bureaucratisation to secure certain privileges and escape not only from the arbitrariness of the management but also from accountability to the community.

4.100 Social relevance can be established only through an iterative and interactive process between society and educational institutions. To facilitate this, "society" will have to be defined with reference to the rate, clientele and catchment area of each type of institution. Once this concept is worked out in detail, educational planners will be able to decide on various parameters of relevance and devise appropriate framework of management structures, accountability and support systems, course curricula and horizontal and vertical linkages with other development agencies. This will lead to a sea-change in the system, the institutions and the attitude of teachers and students, provided the interests benefiting from the exercise of control from afar would loosen their hold on them.

4.101 Once school education becomes socially relevant, its curriculum, content and pedagogy will get modified and the school itself will become the centre of development for the village. The qualitative change desired with regard to the functioning of the schools cannot be brought about through the pressure of officials who come for periodic inspections as representatives of a distant and impersonal system. It can be brought about only by the local communities. To make this arrangement work, it will have to be ensured that the means of getting guidance and assistance are also close at hand. In this connection different people have advocated the block or the district to be the focal point for the educational planning, training, monitoring, extension and action-research support for the school system. The experiment of establishing District Institutes of Education has been tried in Jammu and Kashmir. Its success and replicability will have to be studied to evolve patterns for setting up of District Education Centres in various states. It would also be desirable to examine as to whether the Model School, proposed to be set up in each district, could play some role in supporting the district centres.

4.102 A decentralised system with the district or block as the unit of planning will be able to ensure that the children at two ends of the spectrum of competence will be looked after properly. Those who are physically or mentally handicapped and others who are specially talented and, therefore, capable of joining the reservoir of national talent for the development of the national economy, will need very different treatment and facilities.

4.103 The pursuit of social relevance will also result in the diversification of the course content of education. Introduction of the 10+2+3 system was a step in this direction, which has, unfortunately, been implemented more in form than in content.

4.104 The 10+2+3 system in the school provided for 10 years of general education with science, mathematics and social studies as integrated components, followed by a +2 stage, envisaging branching

off into pre-professional, academic or vocational streams. The rationale for changing from the old system of Matriculation examination followed by entry into colleges, was that the old system was not very sound from the pedagogical point of view. The age of 16, at which most children passed Matriculation examination, was considered to be too immature a stage to fit into a substantially different pedagogical system of collegiate education, in which, the teacher becomes a lecturer and plays the role of a catalyst provoking and motivating students to seek knowledge and skills, to a much greater extent, on their own initiative. By rolling back the first 2 years of college into the school structure, the age-specific competence of children was fitted into the pedagogical system of school education. The rationale for the +2 system has, however, to some extent been undermined in the states where a large number of the students in the +2 stage have been enrolled in junior colleges.

4.105 There are some other criticisms which are levelled against the 10+2 system. The first relates to the expenses involved in equipping the schools imparting education at +2 stage. To some extent, earlier, the cost of equipping the intermediate stage of college education was not so high. This was because there was a commonality of facilities in laboratories and libraries between the intermediate and the under-graduate levels of education. Secondly, the new system is being denigrated on the ground that it has imposed on students a load of textual material quite beyond their competence. In response to this, the academic planners argue that this criticism is not valid since the schematic pattern laid down has been followed only partially. It is explained that the increase in the load of textual material has been occasioned largely by the non-availability of integrated packages of education upto the 10th standard. The new framework was supposed to cut across the conventional boundaries within Arts and Humanities and, the scientific streams of Physics, Chemistry and Bio-science were also expected to merge into a course in General Science. Many books presently prescribed for the new system continue to present knowledge

in the same segmented fashion, put in single jackets under the name of General Science and Social Studies.

4.106 Advocates of the new system emphasise that this has, for the first time, established a uniform pattern for school education all over the country, which can develop into a national educational system in terms of structure and curriculum, facilitating mobility across the states. In addition, it can also lay a common foundation for higher education without differentiating between boys and girls. Till the system was introduced, even in the middle of the 20th century, girls were able to get through their matriculation examination without learning even the rudiments of Science and Mathematics. The new system, it is claimed, is a response to the changing social milieu in which women are expected to play a much more active and meaningful role in the employment market.

4.107 Before proceeding with the examination of issues connected with the bifurcation of the +2 stream, it needs to be stated that amongst practically all sections of the population and even amongst the various sections of the intelligentsia, there is considerable difference of opinion about what constitutes the core of the 10+2 system. Some regard the +2 system as an innovation of great importance because of its accent on vocationalisation, while a sizeable proportion of experts in education regard the new initiative to be concerned more with the content and pedagogy of education upto class 10 than with vocationalisation.

Vocationalisation of Higher Secondary Education

4.108 The recent decision of a State Government to separate the vocational stream of post-10th grade education from higher secondary schools has again raised the controversy as to whether or not vocational education should be regarded as an integral part of the 10+2 system. Significantly, late Prof. J.P. Naik who was the Member-Secretary of the Education Commission of 1964-66 stated in "The Education Commission and After" that "a careful examination of

the recommendations of the commission will show that its proposals for vocationalisation at the secondary stage are not at all connected with the adoption of the new (10+2+3) pattern". He went on to stress that the Education Commission had visualised the provision of vocational courses of 1 to 3 years duration for those who had completed the elementary stage of education. He complained that, contrary to the intentions of the Education Commission, the entire discussion of the programme of vocationalisation of secondary education was being carried on as if it was equal to the two year courses of full-time vocational education that can be provided only outside the higher secondary schools.

4.109 In relation to higher secondary education, the question of objectives is of particular relevance because, if it is geared to employment, it would assume a different pattern and terminal characteristics. If, on the other hand, it is looked upon merely as a stage of general development, it would be geared more towards higher education. This raises the question of who is entitled to go in for the stream oriented to higher education and how selection should be made for vocational education. It also raises the question as to whether vocational education should be expected to provide a skill component adequate to facilitate movement from the school, straight into full employment. While vocationalisation, as a concept, is favoured by economic planners, in the scale of prevalent values, it is rated lower than pre-professional and general education. If the process of branching off is determined by relative academic merit of students, with those with lower order of attainment being sent to the vocational stream, the dichotomy between knowledge and skill, representing higher and lower order of activities, will be perpetuated.

4.110 It needs to be clearly stated that vocational courses are not confined to +2 stage (i.e. classes XI and XII) only. Depending on interest of the pupils, such courses can and should be made available even after class V (along with middle level scholastic

course) or after class VIII or even after class XII of academic stream, for those who would not pursue higher education. Most of the courses would, however, be for post-10th stage. Another point about which clarity is necessary is that vocational courses are not limited to engineering and technical vocations, but include courses in agriculture, business and commerce, health and para-medical services, home science, etc. These courses are not meant to duplicate the work of such institutions as ITIs and Polytechnics - which train manpower primarily for the organised secondary sector. Instead, these are identified in response to the felt training needs on the basis of socio-economic surveys and would mainly respond to self-employment and service sector needs of the community.

4.111 Some of the major problems of implementation of vocationalization programme arise from the paucity of trained teachers for carrying out this programme. Before going on to discuss the mechanics of vocationalization, it seems relevant to pose some of oft repeated questions about vocationalization. The first one relates to whether or not reliable models for assessment of manpower requirements are available for different patterns and rates of growth. The second question relates to the extent to which vocationalisation should be attuned to employment in the organised and/or the unorganised sector and how far it can promote self-employment, especially in the rural areas. The third issue is whether vocationalisation should be so organised that it would provide for vertical mobility into the streams of professional and/or general education.

4.112 Reverting to an earlier line of reasoning regarding the place of vocational education, it is still to be decided as to whether one of the streams of vocationalization would be an integral part of the +2 stream or the entire system of vocational education would constitute an entirely independent institutional arrangement or an altogether new model should be evolved in which vocational training would be imparted in conjunction with technical institutions for higher education or production centres. This decision would have far-

reaching implications regarding the cost, quality and management of vocational education.

4.113 Whatever the decision on the above issues, if vocationalisation is to be pursued vigorously, one of the first requirements will be the provision of an adequate number of teachers. If 40 per cent of the students passing 10th grade were to go into vocationalisation, India will need thousands of teachers and hundreds of institutions for training teachers in the pedagogy of vocational education.

Social Relevance and Technical and Management Education

4.114 It is impossible to over-estimate the importance of technical education. India already has one of the largest reservoirs of trained manpower. Technically trained persons have already been a source of strength for scientific and industrial development. In the decades ahead also, India will need high quality manpower in the field of science and technology to keep it abreast with the emerging pattern of production. The only questions which could be raised pertain to the requirements of trained manpower in terms of absolute numbers and the reasons which encourage under-employment of the graduates of the best institutions.

4.115 It is often suggested that the more talented amongst our engineering students are not provided the kind of jobs and work environment which would give them a sense of achievement and job satisfaction. This has resulted in significant incidence of brain-drain, either into the developed countries or into the management stream, leading to jobs connected with the basic training in science and technology.

4.116 In India 45 per cent of Ph.Ds and 69 per cent of Masters in engineering are engaged in activities unconnected with research and development as against 5 and 37 per cent respectively in USA and 7 and 35 per cent in UK. It is difficult to say whether this is because of

the absence of a challenging research and development environment or because of the orientation of training or due to the policy with regard to import of technology, but the fact remains that very few people have made any contribution to original research which could be considered commensurate with the potential of Indian genius.

4.117 While there is a general agreement that qualitative improvement of technical institutions is necessary, and for their removal of obsolescence, expansion of research and development and taking up of teaching programmes in the frontiers of new technologies have to be taken up on a priority basis, it is also argued that it is not merely equipment or the physical environment of work which determines the excellence of an institution. A culture of equality, interactive and informal atmosphere and scope for the exercise of initiative play a crucial role. Above all, a pervasive sense of quality can best be promoted by a kind of training which does not differentiate between maintenance, production and research functions. In fact, a bulk of the investment made in technological infrastructure and equipment yield low return because of poor maintenance. The system of technical education has also been criticised because of lack of networking arrangements and sharing of facilities and expertise between IITs, Regional Engineering Colleges, State Engineering Colleges, Polytechnics and ITIs. It has been argued that just because most of the activities in the unorganised sector including agriculture and associated activities are undertaken on a small scale, it has been erroneously assumed that these do not require the inputs of the best research and development effort in terms of application of knowledge of science and technology. This neglect is stated to be the consequence of the culture of technical education which tends to widen the already yawning gap between education and society.

4.118 A poor country cannot subsidise high quality technical education without expecting some socially relevant returns. A view is held that something has to be done to re-orient the attitudes of students and create conditions with a view to reducing the incidence of brain drain from India's most prestigious technical institutions.

To the extent leakages are taking place into other countries, this trend represents a reverse flow of capital from the developing to the developed countries. It has been illustrated that the United States of America would have to build 12 medical schools to provide the manpower to match the emigration, at the rate of 1200 per year and the dollar value of this "foreign aid to US approximately equals the total cost of its medical aid and public, to foreign nations."

4.119 The IITs and other prestigious technical institutions have made significant contributions to the development of the Indian economy. Efforts have been made to link various streams of industrial production with institutions imparting technical education in order to obtain not only the mandate for the direction of technical education but also mobilise some resources for atleast the R & D work in technical institutions. There is enough evidence to show that the expected response has not been forthcoming from entrepreneurs either because their expectations of returns from investment are not very high or because it is cheaper to buy modern technologies from abroad.

4.120 In the Soviet Union and many other countries, technical education is being imparted through institutions oriented to particular areas of professional specialisation. In addition to courses in electrical engineering, there are courses for management of power stations, ship building, computer engineering etc. Another feature of technical education in the Soviet Union is that even an engineering student has to go through a substantial programme of humanities and social and political education to understand his role in the national system. In India, even though most of the engineering institutions have faculties for the teaching of arts and humanities, these subjects do not receive much attention.

4.121 In so far as management education is concerned, while there is general appreciation of its importance and its contribution to the economy, there is also a view that there is need for a second look at the extent of subsidy for management education, particularly in the case of foreign scholars. There are a number of areas to which

management institution need to pay more attention. Notwithstanding the general view that obsolescence of the management system in Government is becoming a bottleneck for accelerated development, the R & D activities in these institutions have not been sufficiently re-oriented to encourage the study of this crucial sector. The education system in which management education is one of the streams, is an area of undisputed magnitude, representing one of the largest employment sectors in the country. Many people are arguing about the dysfunctionality of the management models of universities and the school systems on the ground that the size and complexity of operations in these institutions have outstripped the capabilities of their organizational structures. It is desirable that some work is done urgently to evolve alternative models by any of the management institutions.

Higher Education : Social Relevance and the Need for Diversification

4.122 It is necessary to plan to introduce courses in arts, humanities and science with stronger linkages with society in general and the world of work in particular. It is suggested that undergraduate programmes should be re-organised in a modular pattern in which a student should have the option of combining courses concerned with theoretical knowledge, languages, communication skills, culture, sports and programmes of a vocational character. There is no reason as to why a person should not be able to graduate with modules pertaining to political theory, public administration, mathematics and word processing. In fact, there is no reason as to why in a college or university student should not be able to obtain credits for catering, tourism and mountaineering or for adult education, conduct of field surveys, acquisition of knowledge and skills to prevent pollution and for undertaking grafting and raising of nurseries.

4.123 It has also been proposed that a moratorium should be placed on further expansion of the traditional pattern of colleges and universities. New colleges and universities should offer only work oriented or socially relevant courses, catering to carefully

identified tasks which usually have a multi-disciplinary character. For instance, undergraduate colleges offering agriculture and home economics; forestry and land and water development; post harvest technology, processing and marketing; urban planning and transport management or public administration and office management could, besides facilitating employment of graduates, would make significant contribution to rural, urban and regional development. There is a great vacuum in society in the areas which bridge the world of work and the world of knowledge. Concerted action is necessary to bridge this by evolving these support, recognition and credibility.

Quality and Education

4.124 In the earlier chapters, the qualitative aspects of education have been discussed at some length. It would be appropriate to discuss as to how the qualitative dimension of education could be given a more prominent place in the system.

4.125 It is difficult to define quality, particularly with reference to educational processes. However, it could be stated that a quality conscious system would produce people who have the attributes of functional and social relevance, mental agility and physical dexterity, efficacy and reliability and, above all, the confidence and the capability to communicate effectively and exercise initiative, innovative and experiment with new situations. To these personal attributes, one could add the dimension of a value system conducive to harmony, integration and the welfare of the weak and disadvantaged.

Examination System

4.126 In a system in which everything has been subordinated to examinations and grading, the above characteristics of quality will receive no attention unless these too are evaluated and credits are also awarded for them. However, before this is done, the course curricula, textual materials and the teaching-learning processes will

have to undergo a radical transformation. Who can undertake this task and how it might be done are issues which need careful and immediate attention. In this context, it appears self-evident that the present system of annual examinations will have to be modified since these, more than any other factor, have contributed to the deterioration in quality. A stage has now been reached when neither those who conduct examinations nor those responsible for teaching and academic management are scandalised by the very poor grades and pass percentages in examinations. This is largely because the curricula as well as evaluation systems are out of tune, not only with the teaching methods and time disposition in the learning process, but also with the attitudes, limitations and potentials of students. Diagnostic studies, systems analysis, simulation exercises and action research are by and large, conspicuous by their absence, in the field of curriculum development.

4.127 Three other factors which are crucial to the quality of education are: the calibre, work ethic and pedagogic skills of teachers; the management system of education and institutions carefully selected or established to underscore the qualitative capabilities of an enlightened, well endowed and effectively organised teaching-learning system. For centuries, Oxford and Cambridge and now, for decades, Harvard, Yale and Stanford Universities have influenced other institutions by their thrust for quality. Similar institutions have to be established at all levels, in the different streams of education.

4.128 There is an urgent need for a change of curricula in the teachers' training institutions with a view to aligning these with the present state of knowledge of particular subjects and of communication techniques and the availability of educational technologies. In addition, besides imparting a strong and relevant value system, adequate emphasis will also have to be placed in the curricula on social awareness, national imperatives, physical culture and sports and richness of India's heritage of culture. It is argued by some that all the knowledge, attitudes and skills essential for the role of

the teacher cannot be developed within the present time frame of teachers training courses. This may mean extending the duration of these courses. In addition to this, a new and effective evaluation system for the teacher trainees will also have to be developed with utmost care.

4.129 While a design of teachers' training for new entrants will yield long term benefits, for getting some results in the short term, a massive and carefully designed programme of periodical re-training of the teachers will have to be launched. For this, all the teachers' training institutions will have to be pressed into service and their facilities and equipment will also have to be upgraded for discharging the responsibility assigned to them.

Management System for Education

4.130 The management system of education also need careful consideration. Like the Boards of Secondary Education, most of the universities are also groaning under the weight of work associated with affiliated colleges. On the other hand, many of the affiliated colleges are experiencing difficulties because irrespective of their excellence, their activities and academic programmes are dislocated by the events in other institutions. For many years, the idea of giving autonomy to institutions of quality has been advocated. In spite of this, practically no progress has been made in this direction. This stalemate has to be ended by purposeful and immediate action. Actually, the patron-client relationship between universities and colleges has to give place to a participative relationship of shared responsibilities.

4.131 In the above context, attention is invited to the fact that in most of Europe, America and South East Asia, the phenomenon of affiliated colleges is conspicuous by its absence. In spite of this, there is no evidence to suggest that the quality of education in these regions has suffered on this account. Conversely, it is doubtful if the IITs and a number of other institutions would have succeeded in

their thrust for excellence, had they been tied to the apron strings of mother universities. It needs to be examined in detail as to how will the wholesale decentralisation of the processes of education at the college level affect the quality of its product.

4.132 The structure of university management is characterised by a disequilibrium between the role and responsibilities of the Vice-Chancellors and other bodies and also by the lack of accountability of the various bodies concerned with academic and managerial functions. There is a general feeling that radical changes are required in the present system of management which would reflect the de facto relationship between various faculties, decision-making bodies and the Vice-Chancellor. In this context, there is considerable divergence of views about the relative emphasis to be placed on the autonomy or the accountability of colleges and universities. This largely reflects the perceptions of social responsibility of the university system in the context of the social expenditure on their establishment and management. Perhaps it would be easier to strengthen the autonomy of the universities if a viable system of the accountability of a university as a whole and various faculties and bodies within the university could be established and a suitable system of incentives and disincentives could also be fashioned on this basis.

4.133 The idea of a code of conduct being evolved by the teachers' organisations has been under discussion for a long time and the National Commissions on Teachers have recommended that if these organisations are unable to come out with a code, this task should be performed by the Government. The problem, however, is larger than the code of conduct for the teachers only. It must be determined as to how the performance of a college or university teacher should be evaluated and what weightage should be given to the level of attainment of students, proper conduct of examinations, regular running of a college or university, the quality and quantity of research, etc. It is felt by many that the decision to allow what amounts, in practice, to automatic promotion on the basis of seniority should be re-opened; otherwise there will be no way of creating the

urge and the compulsion for the pursuit of good teaching. On the other hand, young people with talent and imagination may not turn away from a profession which does not distinguish between mediocrity and genius. While on the subject of excellence and attracting and retaining manpower of high merit, it seems necessary to stress that the principles which should govern the determination of emoluments and other facilities, particularly housing, of college and university teachers should be laid down with care.

4.134 In so far as financial support is concerned, it has been suggested that this should be available to institutions of higher education only for research. For other activities, those who can pay should meet the cost while others, if they are specially meritorious or specially disadvantaged, could be provided scholarships to pursue their studies. This will ensure that universities and other institutions will pay adequate attention to research activities, without which, many institutions have lost their character and standing as academic institutions. Educational administration today, whether administering large institutions or an organisational system, requires skills and insights quite different from knowledge of specific subjects or the capacity for communicating them to the students. It would, therefore, be necessary to develop an appropriate pedagogy for the training of educational administrators.

Depoliticisation of Education

4.135 The need for the depoliticisation of education in schools, colleges and universities has been stressed by students, parents, guardians, teachers and administrators on the ground that, without this, it will not be possible to cleanse the universities and establish a suitable environment for work. It is, however, recognised that political education is essential for preparing future citizens for participating in the process of democracy. This would mean that political issues might be debated within the precincts of the university at the intellectual level but the administrative system of the university should not be used or subverted for the ends of any

political party. This view would necessarily predicate the exercise of self-restraint by all concerned i.e., the Central Government, the State Governments and also by other parties not in power. There is an urgent need of establishing a consensus on this issue. Whether any legislative measures are called for also needs consideration.

4.136 Besides the above suggestions, there are many other areas requiring urgent attention for the qualitative improvement and restructuring of the education system. Of these, the most important pertains to the need for establishing a viable and effective infrastructure for education at the central, regional, state and district levels. Multi-level planning has to be recognised as a crucial process for formulating programmes, maintaining reliable data systems and evaluating the functional efficiency of the system on an objective basis. Besides planning, it is necessary to provide adequately for methodological research, innovation and experimentation in respect of the interfaces between knowledge, pedagogy, skills development and educational technologies for various aspects and streams of education. An appropriate institutional arrangement is also required for taking care of the horizontal and vertical linkages between education and other activities on the one hand and the centre-state cooperation, on the other.

4.137 The importance of managing these inter-linkages is obvious. However, to underline this, reference may be made to the close relationship between education, sports and culture. Education cannot fulfil the tasks of character building, physical development or the socialisation of the individual student into a community without providing facilities for training and participation in sports. A school or a college without sports facilities is rightly regarded as an incomplete institution. Similarly, without enrichment from the bounties of culture, education cannot endow the participant with either a perspective of the past or with the capacity to create or enjoy the finer things of life.

International Cooperation

4.137 ^A Jawaharlal Nehru had led our country to a distinct place in international relations. We have always maintained amicable relations with all countries without aligning with any power block. Our place in the Third World is based on a philosophy of mutual respect, non-interference and active cooperation. We have fully supported the idea of solidarity among the non-aligned and stress on the New International Economic Order. While this policy has promoted international peace and cooperation, it has given to our country a place of honour in the comity of nations.

4.138 We have remained committed to the ideals of UNESCO ever since its founding and have played an active role in establishment of the new information order and in strengthening regional cooperation. Our role as one of the oldest members of the Commonwealth extends beyond political and economic issues and embraces educational and cultural concerns. The coming years would see new areas explored in the field of technical cooperation among deveoping countries. This may take the shape of promoting the establishment of a network of technical and professional institutions of high quality through mutual cooperation in the developing countries, exchange of scholars, students and artists. We also have a particular interest in improving educational and cultural ties with our neighbours with whom we share a common heritage going back to centuries.

Design for an Integrated Strategy of Education

4.139 A design for an integrated strategy for education has to evolve from national priorities, resource constraints and the essential interdependence of different programmes.

4.140 Seen from this angle, it appears that the national goals of development, integration, excellence and equity cannot be fulfilled without ensuring that every child in the country crosses a minimum threshold of educational attainment. Even for facing the challenges

of the world of today, a minimum level of education is essential for the development of individual personality, appreciation of the constraints and potentials of environment, internalising a value system, imbibing an awareness of social responsibilities and the acquisition of specific capabilities to deal with life. In the years to come, a general spread of this level of education will become crucial to survival. Hence, universalisation of elementary education has to be one of the essential ingredients of a national strategy. The emphasis on universalisation is important for another reason. Unless it is there, concern with drop-outs will not assume the urgency it deserves.

4.141 At the other end of the scale, the national strategy of education has to ensure the availability of highly educated, trained and motivated manpower for dealing with the challenges which are inherent in the modernization and globalization of the economy. India has to be able to compete with the most advanced countries in many fields of production to hold its own. Hence the inescapable need for setting up and maintaining institutions of excellence at all levels to tap the best talent and nurture it with care and competence.

4.142 A system of production and management based on highly sophisticated technologies cannot survive unless the service sector and the infrastructural facilities are also modernised. This requires large scale vocationalisation to produce a large body of skilled technicians trained in polytechnics, vocational streams of secondary education, ITIs, community polytechnics and other institutions appropriately organized and equipped with the requirements of the processes of training.

4.143 The educational objectives mentioned above and many other objectives dependent on the values, attitudes and the participation of the people cannot be achieved in an atmosphere of ignorance and apathy, either to value of education or to the requirements of population control, health and hygiene, ecology and environment, peace and order and other imperatives of national integrity and survival. A

massive programme of Adult Education supported by all the media and all the educated citizens, therefore, becomes a crucial pre-requisite. A total atmosphere for development, hard work and excellence can be built up only through a programme which involves everybody as a promoter as well as a recipient of new attitudes and ideas.

4.144 In broad terms, the task of evolving the New Education Policy would consist of laying down a long-term strategy for education in which the requirements of universalization of elementary education; production of sophisticated manpower in adequate numbers to deal creatively with new technologies; diversified vocationalisation; and the creation of an overall environment for change and development through adult and continuing education would be integrated with measures to improve the quality and outputs of all other educational sections. In this integrated strategy, specific roles will have to be assigned to different agencies for drawing up and implementing detailed programmes. To ensure functional and sequential complementarities, it will be necessary to set forth the framework for interaction and integration.



